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Mitchell R. Childress

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Garrow & Associates
510 South Main
Memphis, TN 38103

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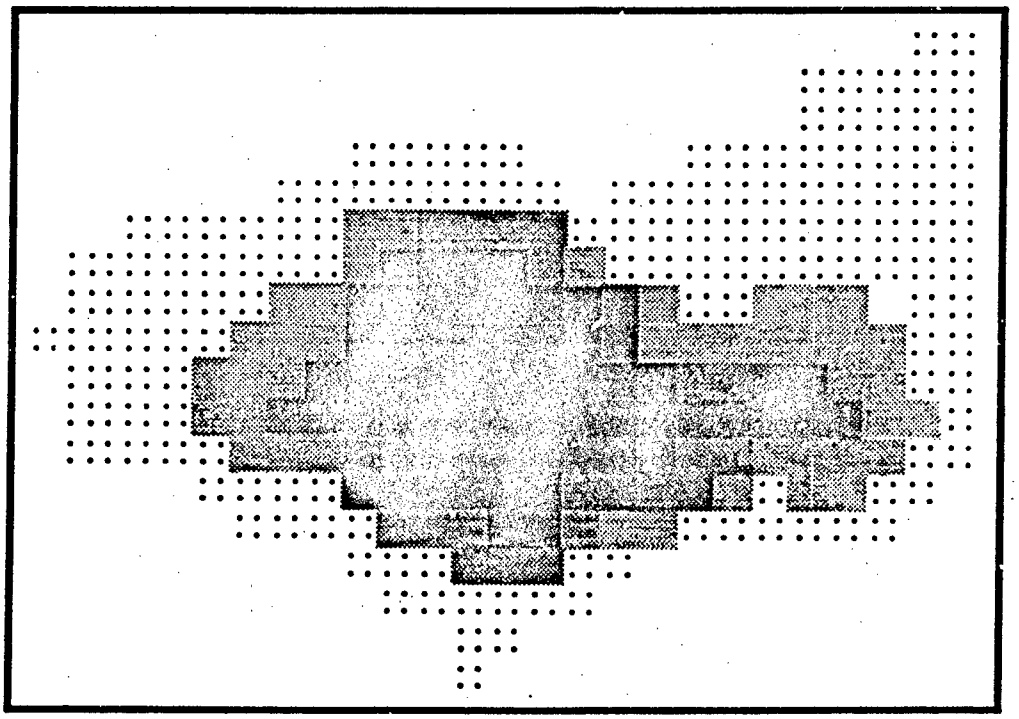
ANALYSIS AND INTERPRETATION OF ARTIFACT COLLECTIONS FROM FOUR ARCHAEOLOGICAL SITES WITHIN THE COUNTRY CLUB GARDENS PERMIT AREA, WEST MEMPHIS, CRITTENDEN COUNTY, ARKANSAS



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(274)

ANALYSIS AND INTERPRETATION OF ARTIFACT COLLECTIONS FROM FOUR ARCHAEOLOGICAL SITES WITHIN THE COUNTRY CLUB GARDENS PERMIT AREA, WEST MEMPHIS, CRITTENDEN COUNTY, ARKANSAS

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Memphis, Tennessee 38103

Mitchell R. Childress

Mitchell R. Childress, Principal Investigator and Author

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ABSTRACT

During June of 1990 controlled surface collection were made on four archaeological sites in Crittenden County, Arkansas, just west of the urban section of West Memphis. A test unit was also excavated at one of the sites. The initial site identifications were made by Jim McNeil of the Memphis District Corps of Engineers and field work was performed by a crew under his direction. Garrow & Associates, Inc. was subsequently contracted with to analyze the artifacts from the surface and subsurface contexts at the sites in order to determine their potential eligibility for nomination to the National Register of Historic Places. This report contains the results of the analysis, interpretations of the sites based on the assemblage content, and recommendations.

Historic components recognized on the sites date to the late nineteenth to early twentieth century. Three isolated prehistoric sherds were also recovered. Historic site collections from within the permit area are interpreted as kitchen refuse scatters spacially isolated from associated occupational areas. Alternatively, the collections may represent short-term occupational episodes associated with African-american tenant farming. More research into the alternative proposition of site association is required before this can be considered a valid interpretation. While the association of the sites with a specific ethnic or socio-economic group was not forthcoming from the analysis, enough data was gathered to determine that none of the sites meet eligibility criteria for nomination to the National Register of Historic Places. No further archaeological investigation is recommended.

ACKNOWLEDGEMENTS

This report has benefited from the assistance of several individuals. Personnel at the Memphis District Corps of Engineers provided support for the analysis and Jim McNeil offered important clarifications on a number of points. The original fieldwork was conducted by William Calhoun, Marshall Harper, Kristen Price, and Judy Osment under the direction of Jim McNeil. Cleaning and processing of the artifacts was competently done by Patrick Hopper and Amy Cooley.

Guy Weaver consulted with the author during the interpretation of the assemblages, checked identification of artifact types by the lab crew, assisted with input of the raw data required for the extrapolated artifact density plots, and reviewed the interpretive section of the manuscript. His professional attention to these matters is greatly appreciated, and I believe the report has been significantly strengthened by his input. Vince Macek prepared the graphics accompanying the document. The final form of the draft report is a partial reflection of the expert editing provided by Patrick Garrow. Barbara Avery Garrow served as project manager and handled the related administrative details.

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I. INTRODUCTION

This report describes the results of analysis of four artifact collections from Crittenden County, Arkansas. The artifact samples are derived from controled surface collections and from a single 1 x 1 meter test unit. Analysis of the material was undertaken to determine site significance and to inform a decision concerning the need to conduct additional archaeological testing. Fieldwork was performed by the U. S. Army Corps of Engineers in June of 1990 and the analysis was conducted by the Principal Investigator in October of the same year.

The local environmental and physiographic conditions of the project area are reviewed in Chapter II. Information on the culture history of central drainage of the Mississippi Alluvial Valley is presented in Chapter III. Chapter IV outlines the methods and results of the original field investigations and presents the data derived from the laboratory analysis. The document concludes with a summary and recommendations in the final chapter (V).

II. LOCAL ENVIRONMENT AND PHYSIOGRAPHY

PROJECT AREA LOCATION

The Counrty Club Gardens permit area is located in the SW 1/4, NW 1/4 of section 14, T6N, R8E at approximately 212' above mean sea level (Figure 1). It is bounded on the west by Ditch No. 13. This drainage feeds into Tenmile Bayou just south of the project site. Approximately 44 acres (17.7 hectares) within the permit area may be impacted by development.

Four archaeological sites have been identified within the tract (Figure 2). These have been assigned arbitrary numbers 1 through 4 pending the release of offical site numbers by the state of Arkansas. These numbers were assigned in November, 1990 and have been appended to the text of the final report. Site 1 (3CT267) is contained completely within the permit area and appears to cover an area of 2,800 m^2. Sites 2, 3, and 4 (3CT268, CT269, and CT270) are located on the southern edge of the tract and are artificially delimited by this boundary.

PHYSIOGRAPHY AND SOILS

Crittenden County is within the Eastern Lowlands subdivision of the Central Mississippi Valley (Morse and Morse 1983:2). The county is contained completely within the meander belt of the Mississippi River, which is bordered on the east by the Pleistocene loess bluffs and on the west by Crowley's Ridge, located approximately 70 km from Memphis. The sediments within this zone are alluvial and terrace deposits of the Mississippi River bottomlands (Foti n.d.). Until ditch and levee construction was begun in the late nineteenth century, the entire county was subject to frequent flooding by the Mississippi River and its local tributaries. The surface alluvium exceeds 100 feet in depth and is derived from soil, rock, and sediment from throughout the upper Mississippi River Basin (Gray and Ferguson 1974:2). The topography of the county ranges from broad flats to areas of alternating ridges and swales. These ridges represent natural levees of abandoned river channels.

Drainage in the county is generally southward through a system of artificial ditches and natural drainways which empty into the Mississippi River (Gray and Ferguson 1974:2). The county has many streams, bayous, and lakes. Major drainages in Crittenden County include the Tyronza River, Fifteenmile Bayou, Tenmile Bayou, and Big Creek.

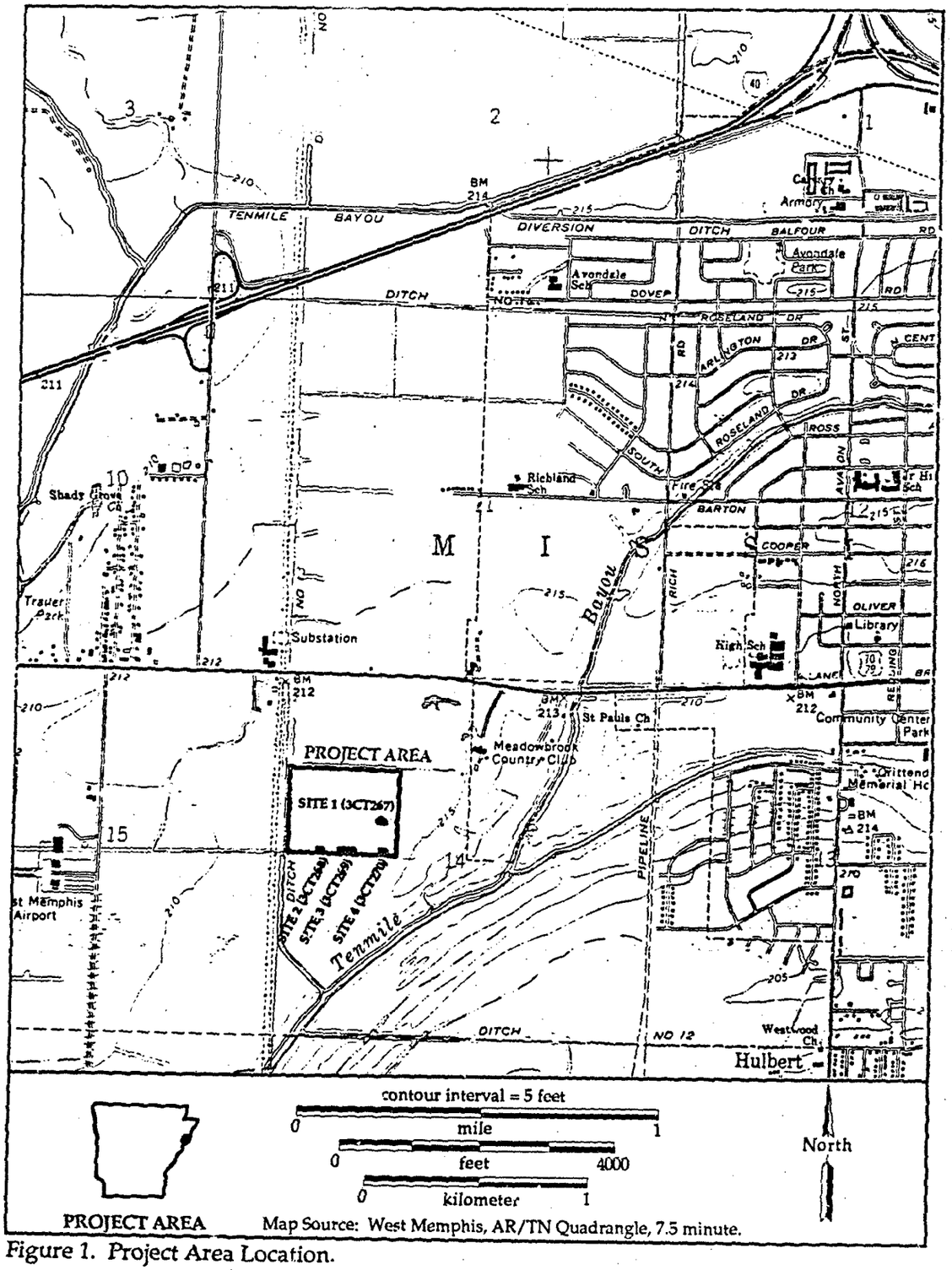


Figure 1. Project Area Location.

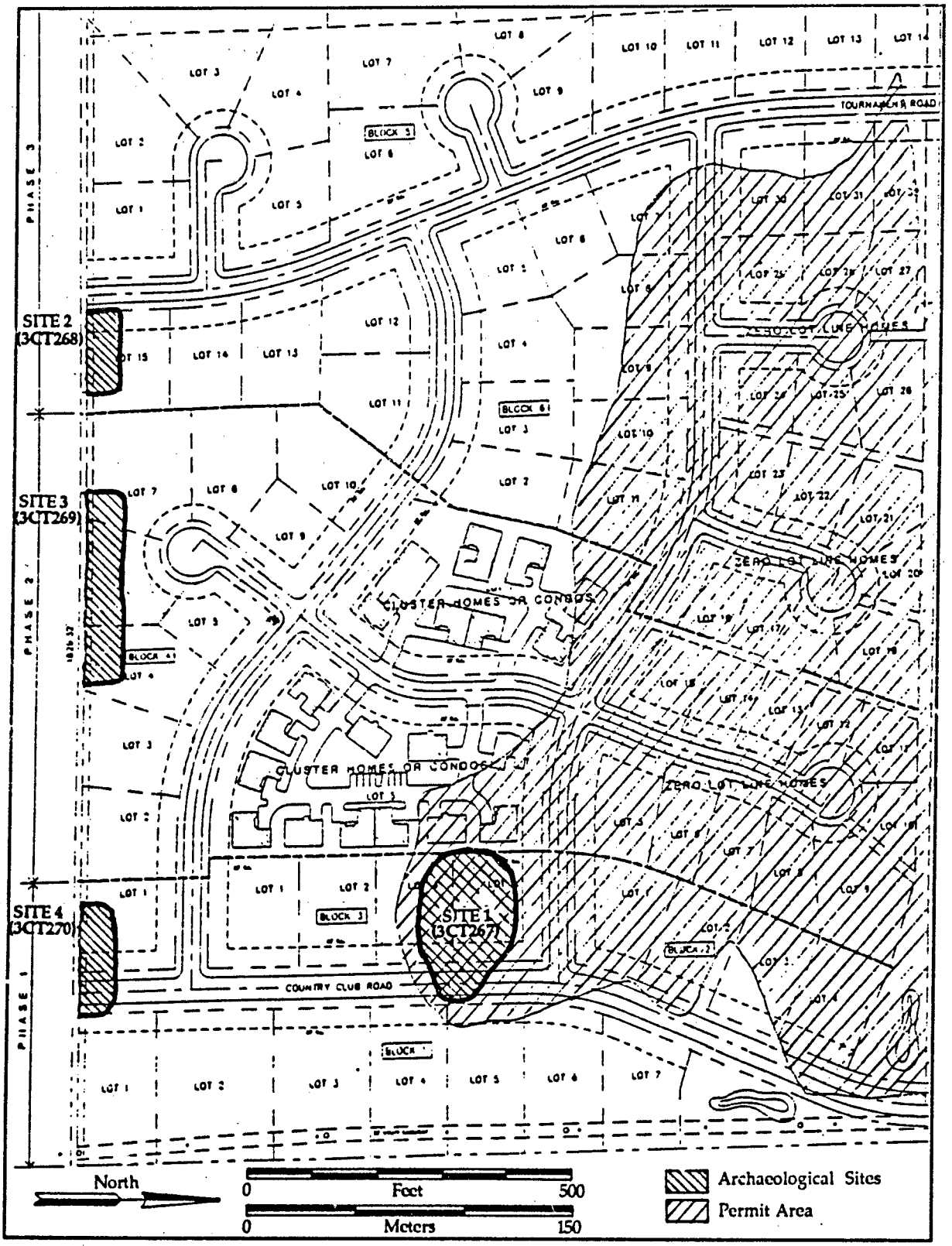


Figure 2. Location of Archaeological Sites within the Permit Area.

Differences in elevation within the county are marked by distinctive sediment types. The U.S. Soil Conservation Service has mapped the natural sediments in the study area as Sharkey silty clay, 0-1% slopes (Gray and Ferguson 1974: 20; Sheet 37). These soils are characterized as:

> ...poorly drained, level to gently undulating soils in slack water areas. These soils formed in thick beds of clayey sediments. The content of organic matter is moderate to high. These soils shrink and crack when dry, and expand when wet. A representative profile of Sharkey silty clay shows an Ap layer from 0-5 inches composed of 10 YR 3/2 silty clay; an A12 layer from 5-8 inches composed of 10 YR 3/1 blocky silty clay; underlain by a B21 layer from 8-17 inches composed of 10 YR 4/1 clay with 10 YR 5/6 mottles (Gray and Ferguson 1974:20).

Sharkey silty clay 0-1% slopes is generally found on broad flats. Proportionally, this soil type is found over 31.6% of Crittenden County, making it the most frequent soil type represented in the county (Gray and Ferguson 1974:8).

CLIMATE

The climate of Crittenden County is warm and moist, with relatively mild winters. The hottest month is July, with an average high temperature of 91.1° F and average low of 71.5° F. The coolest months are December and January, with average high temperatures of about 50° F and average lows of 32.4° F. Temperature extremes range from over 100° in the summer, to the teens in the winter. The growing season lasts approximately 230 days (Gray and Ferguson 1974:3).

Relative humidity averages about 70% throughout the year. Rainfall averages 49.7 inches per annum, and comes mainly in the fall. Winter is the driest time of year (Gray and Ferguson 1974:3-4). Thunderstorms are common in the summer. Before the construction of a permanent levee system in 1918, floods that covered the city of Marion with up to five feet of water were common (Woolfolk 1982).

FLORA AND FAUNA

When settlers first arrived in Crittenden County, the land was covered with dense hardwood forests. The rich alluvial soils supported some of the best hardwoods in the southern United States. The principal species include sweetgum (*Liquidambar*

styraciflua), cottonwood (*Populus deltoides*), hackberry (*Celtis occidentalis*), pecan (*Carya illinoensis*), baldcypress (*Taxodium distichum*), ash (*Fraxinus americana*), sycamore (*Platanus occidentalis*), oak (*Quercus* spp.), and black willow (*Salix nigra*) (Morse and Morse 1983:14). In recent years, much of the acreage has been cleared for agriculture, and the original forest cover has been reduced to about 10% or less of the land area (Gray and Ferguson 1974:2).

The dense hardwood forest supported a wide variety of wildlife. Native mammals included bison (*Bison* spp.), white tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), wolf (*Canis* spp.), bobcat (*Lynx rufus*), raccoon (*Procyon lotor*), opposum (*Didelphis virginiana*), red fox (*Vulpes vulpes*), grey fox (*Urocyon cinereoargenteus*), beaver (*Castor canadensis*), and squirrels (*Sciurus* spp.). The area also supported a diverse number of reptiles and amphibians. Turkey (*Meleagris gallopavo*) were an important source of food for the early inhabitants of the area, as were migratory mallard ducks (*Anas platyrhynchos*) and canadian geese (*Branta canadensis*). Fish from the larger streams, oxbow lakes and beaver ponds, such as the flathead catfish, alligator gar, drum, buffalo, largemouth bass, walleye, channel catfish, bowfin, gar, suckers, and many smaller fish, were also an important food source for prehistoric and historic occupants (Morse and Morse 1983:15).

III. CULTURAL OVERVIEW

INTRODUCTION

The central section of the alluvial floodplain of the lower Mississippi River contains cultural remains associated with the entire span of human occupation in North America. Certain portions of the occupational record, particularly those characterized by the production of ceramics, have been more intensively researched than others, and investigation of the earlier phases has been hindered by differential preservation associated with landscape modification caused by shifting river channels and deposition of deep alluvium. Heavy alluvial deposition following the entrenchment of the main river channel and abandonment of braided stream surfaces probably affected the earliest site record most intensively. Morse (1982:22) has suggested that some of the first sites created in eastern Arkansas may now lie under many meters of floodplain silts and clays.

PREHISTORIC PERSPECTIVE

The prehistoric period in the southeastern United States is traditionally divided into four major periods: Paleoindian, Archaic, Woodland, and Mississippian. Each of these periods is defined by characteristic artifact assemblages and patterns of subsistence and settlement. Northeastern Arkansas has long been recognized as one of the richest archaeological areas in eastern North America in terms of the wealth and complexity of prehistoric settlement. The area has seen extensive investigation since the middle of the last century. More recently, a number of large scale survey and excavation projects have been conducted in northeastern Arkansas (e.g., Anderson et al. 1989). These have greatly expanded the available data base on the prehistoric occupation of the area. In the following sections, a brief description of the culture history of the central Mississippi valley focusing on Crittenden County is presented in a period by period format.

THE PALEOINDIAN PERIOD

The Paleoindian period (ca. 11,500-9800 B.P.) represents the earliest human occupation in the southeastern United States. The placement of these occupations in the terminal Pleistocene epoch indicates an adaptation to cooler climatic conditions and a different physiographic regime than found in the modern

Holocene. Aboriginal groups of the period were likely small, mobile bands dependent upon a hunting and gathering economy. Although they may have hunted some of the megafauna that became extinct at the end of the Pleistocene, such as mastodon (*Mammut americanum*), bison (*Bison bison antiquus*), and ground sloth (*Megalonyx sp.*), it is likely that the subsistence base was varied and included a number of plant and animal foods. Most of the known finds in northeast Arkansas are from surface contexts and tend to occur along the major river systems. The major diagnostic artifacts of the Paleoindian period are lanceolate, fluted points.

The Dalton period is considered to be transitional between the Paleoindian and Archaic traditions. The key distinguishing feature of material culture is the unfluted, lanceolate Dalton point. In terms of chronological placement, Dalton is often considered either terminal Paleoindian or Early Archaic. Goodyear (1982) has argued that Dalton represents a distinct temporal interval between the two periods, occurring between 8500-7800 B.C., and has pointed out the continuity between the lithic reduction strategies employed by Paleoindian and Dalton populations (Goodyear 1982:384; see also Smith 1986:14). While technologically similar to Paleoindian, Dalton manifests an adaptive pattern that is more akin to later Archaic cultures. One of the most important game species from this time forward to the contact era seems to have been the white-tailed deer (*O. virginianus*) (Morse and Morse 1983:71). The Dalton toolkit is also distinguished by the addition of a larger number of special-function tools and the presence of the woodworking adz.

In contrast to other southeastern regions, northeast Arkansas is distinctive in yielding extensive and important data on Dalton site types, material manifestations, and spacial patterning. Much of this data has been generated from surveys and excavations conducted along the L'Anguille River just west of Crowley's Ridge. Excavations from sites such as Lace, Brand, and Sloan have uncovered evidence of possible burials and revealed features identified as living floors and shelter remains. The distribution of sites and types along the major drainages has also led to the formulation of competing settlement pattern models (Morse 1975, 1977; Morse and Morse 1983; Schiffer 1975; Price and Krakker 1975).

THE ARCHAIC PERIOD

The Archaic period has been dated from about 7800-1000 B.C. in northeast Arkansas. It is traditionally divided into three shorter intervals: Early Archaic (ca. 7800-5000 B.C.), Middle Archaic (ca. 5000-3000 B.C.), and Late Archaic (ca. 3000-1000 B.C.). Temporal divisions of the Archaic are primarily based on the occurrence of distinctive projectile points. These bifacial tools have been demonstrated to change in a patterned way through time and, although a plethora of names have been applied to different morphological forms, occur as "clusters" (see J. Chapman 1975) of related types with a particular spacial distribution. In addition to diagnostic biface

types, other material markers provide means to subdivide the Archaic in the interior southeast. These include types of groundstone artifacts (e.g., Kwas 1981; Elliott 1989), fragments of carved stone bowls, and variation in mortuary items.

The Archaic is characterized by a general and gradual increase in population that has been referred to as regional packing. This demographic trend is accompanied by adaptations geared to the intensive exploitation of different broad environmental zones and to the eventual demarcation of territorial boundaries archaeologically recognizable as phases (e.g., Anderson and Hanson 1988). Intensive exploitation of food resources is reflected in substantial quantities of fire-cracked rock on many Archaic sites. This artifact class results from stone bowling techniques involving the use of skin bags or wooden bowls prior to the adoption of pottery (see Goodyear 1988).

Subdivision of the Archaic and consideration of its attributes are complicated in the central portion of the Mississippi valley by the presence of the river itself and by the contrast in ecotones represented by the broad floodplain and the immediately adjacent loess hills zone of extreme western Tennessee. The river may have acted as a cultural boundary during prehistory, but the precise nature of the boundary effect has not yet been delineated (Morse and Morse 1983:1). In addition to this factor, it seems that the varied resources of the floodplains and loess hills would have acted to differentially condition prehistoric cultural adaptations. The degree to which the archaeological record generated by Archaic activity reflects varied responses to environmental zones or boundaries between social units ("phases" or "culture areas") is a problem for future research. No attempt has been made to reconcile the contrasting schemes proposed for the Archaic of eastern Arkansas and western Tennessee (Morse and Morse 1983:99-134; Smith 1979, 1989) and no effort will be made to do so in this report. The review of both the preceramic and ceramic periods will draw more heavily on Arkansas data because of the project area location and because the data base for western Tennessee is rather sparse (see Jolley 1985:7-13). However, because the project area is within the floodplain proper but occupies a space very near the interface of these two contrasting environmental regimes, brief consideration of data generated on both sides of the river seems to be in order.

Early Archaic

The transition to the Early Archaic is marked by the beginning of the Holocene period and the evolution of a new regime of flora and fauna. In contrast to Paleoindian adaptations, the Early Archaic appears to represent a shift to a more localized subsistence strategy based on seasonal harvest of plant and animal resources. Similar to earlier occupations, Early Archaic sites tend to be light scatters, reflecting a mobile lifestyle by small groups. Diagnostic projectile points for this period in the central valley include the San Patrice, St. Charles Notched, Hardin

Barbed, Rice Contracting Stemmed, and examples in the Kirk/Palmer cluster (Morse and Morse 1983:104-108; Smith 1989:3). Terminal Early Archaic bifurcated forms, common in other areas of the southeast, appear to be absent (C. Chapman 1975:152; Morse and Morse 1983:104).

Middle Archaic

The Middle Archaic period is poorly represented in the lowlands of the northern Mississippi Alluvial Valley (Chapman 1975:177; House 1975:30). It can be roughly distinguished from the Early Archaic by the increased presence of ground stone artifacts and a less diverse stone tool kit. The Middle Archaic (ca. 5000-3000 B.C.) represents a period of increasingly localized exploitation of the resource base, and expanded efficiency in the utilization of terrestrial and riverine resources . Morse and Morse (1983:99) have suggested the term "Hypsithermal Archaic" be used for this period in the central Mississippi valley to denote population shifts away from the lowlands in response to a warmer, dryer climatic era. The suggested temporal duration of the "Hypsithermal Archaic" (7000-3000 B.C.) includes what is traditionally considered the latter portion of the Early Archaic. In contrast to the Morses, Chapman (1975) has utilized observations from southeast Missouri to argue that the lowlands were occupied in the Middle Archaic. Just east of the project area, the rather scanty and problematic Middle Archaic record of western Tennessee (Jolley 1985:10; Smith 1989:3) suggests the use of a broad seasonal round by groups moving between the lower Tennessee River and the Mississippi River loess hills zone (Smith 1972:111). Information from the Missouri bootheel, Ozark highlands, and loess hills (see also Johnson and Brookes 1989) suggest that regional data bases from areas immediately adjacent to the lowlands can perhaps be synthesized in the future to formulate specific research questions focused on the Middle Archaic.

Firm identification of Middle Archaic artifacts associated with temporal divisions of the period has been difficult to achieve. Diagnostic artifacts for the Middle Archaic are thought to include basal notched Eva and Calf Creek points and side notched Hickory Ridge and Cache River projectile points (Morse 1982:22; Morse and Morse 1983:108-110). The side notched forms are morphologically similar to Early Archaic Big Sandy points. Their association with a Middle Archaic horizon, however, suggests the possibility of a distinctive and later side notched form. Smith (1989:4) has identified the Haywood point (see Smith 1979:Figure 15) of western Tennessee as one possible Middle Archaic marker for the region. Smith (1989:3) has also noted that classic Eva projectile points are almost non-existent more than 35 km west of the lower Tennessee and Morse and Morse (1983:108) point out a similar scarcity within the western lowlands of Arkansas. These observations call into question the recognition of a true basal notched horizon (Morse and Morse 1983:108-109) within the western lowlands. Smith (1987:32; 1989:5) has suggested that his stemmed Bartlett (see Smith 1975:Figure 4) projectile point form may be diagnostic of the latter portion of the Middle Archaic along the central Mississippi drainage. It

appears rather obvious that more work on the Middle Archaic is required to work out many of the current chronological and material aspects of the period. Clarification of these issues could be greatly facilitated if an intact Middle Archaic component could located and excavated.

Late Archaic

The Late Archaic period (ca. 3000-1000 B.C.) continued the development of more sophisticated adaptations to localized resource zones. The large number of sites documented for this period suggests that population levels continued to increase. Human habitation of the lowlands expanded and intensified during this period (Morse and Morse 1983:115-134). The use of cultigens becomes widespread, with evidence for the use of native seed plants and tropical species (squash, gourd). Two temporal units, the Frierson and O'Bryan Ridge phases, have been tentatively identified in northeast Arkansas. Smith (1989; Smith and Weinstein 1987; Smith and McNutt 1988) has posited a number of Late Archaic/Poverty Point phases for extreme western Tennessee based on the occurrence of diagnostic artifacts such as microblades and distinctive baked clay objects. Late Archaic sites are identified by a range of artifact types, including Gary, Big Creek, Burkett, and Table Rock/Motley Stemmed projectile points, chipped stone adzes and rarely, steatite vessels (C. Chapman 1975:217; Morse and Morse 1983:122). Toward the end of the Late Archaic period, clear relationships with the Poverty Point complex of the lower Mississippi Alluvial Valley are evident in the widespread occurrence of baked clay objects and lapidary items, such as carved and polished beads (cf. Smith and McNutt 1988).

THE WOODLAND PERIOD

The Woodland period in the southeast is also divided into three periods: Early Woodland (1000-500 B.C.), Middle Woodland (ca. 500 B.C.- A.D. 500), and Late Woodland (ca. A.D. 500-800). The Early Woodland period is traditionally marked by the introduction of pottery, the appearance of elaborate burial mound ceremonialism and the first evidence of intensive horticulture. Settlement systems were characterized by small dispersed villages located in the lowlands, with upland areas at best little more than seasonally occupied hinterlands (Morse and Morse 1983:143-144).

Early Woodland

The term Tchula has been used to refer to Early Woodland components in the northern portion of the lower Mississippi Alluvial Valley (Phillips et al. 1951:431-436; Phillips 1970:876-886). No Tchula period phase has been formally defined on

the Arkansas side of the river in the vicinity of West Memphis. Excavations at the McCarty site (Morse and Morse 1983:145-159), as well as limited evidence from the Turnage, Bradley, Red Oak (Phillips 1970:879) and Mound City sites, however, suggest the existence of a population aggregate within eastern Arkansas during the last millennium B.C. that exhibits general affinity to the Turkey Ridge phase (Phillips 1970:878-879) of extreme northwestern Mississippi and southwestern Tennessee (see Morse and Morse 1983:145). Ceramic marker types for the period include some fairly elaborate specimens of Cormorant Cord-Impressed as well as Withers Fabric-Impressed, Mulberrry Creek Cord-Marked and Baytown Plain. These grog or clay tempered ceramic types contrast sharply with the sand tempered wares of the contemporaneous Pascola phase, situated farther to the north.

Middle Woodland

The Middle Woodland (ca. 500 B.C.-A.D. 500) period witnessed the reemergence of widespread exchange networks throughout the Southeast and Midwest, involving a number of raw materials and finely crafted finished goods. In fact, one of the most widely recognized markers of the Middle Woodland are exotic artifacts associated with the extensive, pan-Eastern Hopewellian culture. Marksville is the term used to describe the Mid-Southern Hopewellian expression along the Mississippi drainage. Artifacts involved in the Hopewell Interaction Sphere (Caldwell 1964; Seeman 1979) have been found in Middle Woodland burial mounds excavated near the project area, most notably at the Helena Mounds located at the southeastern terminus of Crowley's Ridge. The Helena Mounds, type site for the local Middle Woodland phase, contained numerous burials and artifacts suggestive of both northern and southern spheres of influence (Ford 1963). Recent analysis of the mortuary patterning at Helena (Mainfort 1988b) supports an interpretation of the societies within eastern Arkansas at this time as moderately stratified. Stratification was likely linked to differential success in trade relations. Mound City, in Crittenden County, may also represent a major Marksville mound site. Unfortunately, detailed investigations at Mound City have never been conducted and the site is currently endangered by the urban expansion of West Memphis.

A number of other large mound sites occur within the major drainages of the Mississippi and in seemingly more marginal locations (e.g., Pinson Mounds; see Mainfort 1986, 1988a), many of them containing burials associated with a wealth of imported goods, including copper, mica, galena, and shell artifacts. This information sheds light on ceremonial aspects of Middle Woodland societies in the Mid-South, but the general nature of the Hopewell/Marksville influence in northeast Arkansas is not well understood. The archaeological record of the Middle Woodland consists mainly of ceramic assemblages, with little detailed information on the lifeways of the people (but see Morse 1988). A pattern of dispersed autonomous villages and infrequent ceremonial centers is suggested (Morse and Morse 1983:162).

Late Woodland

The Late Woodland period (ca. A.D. 500-800) is poorly understood throughout the Southeast. The elaborate ceremonialism, trade networks, and earthworks associated with Middle Woodland times appear to have died out or become greatly attenuated. In northeast Arkansas, this period is divided geographically into two major study units -- Baytown (see Phillips 1970) in the southern portion of the region and along the eastern border, and Barnes (Dunklin phase), concentrated in the northern portion. In general, plain grog tempered pottery predominates, although cord marking is most typical of Baytown period sites, while sandy paste ceramics typify Barnes.

The Late Woodland developed into a Coles Creek period culture along and south of the Arkansas River after about A.D. 700. The Toltec site near Little Rock is a major regional center during Coles Creek period (Rolingson 1982). During the Late Woodland, the foundations of the cultural adaptation known as the Mississippian developed in the central Mississippi Valley, and northeast Arkansas may be the area where this development first emerged.

THE MISSISSIPPIAN PERIOD

Perhaps no period of southeastern prehistory has been more intensively researched than the Mississippian. Based on excavations at numerous sites and extensive surface collections, a cultural pattern for the latest prehistoric segment has been both defined and continuously refined. From about A.D. 900 until initial European contact in the sixteenth century, Mississippian societies of differential complexity controlled local and regional territories along most of the large rivers of the interior southeast, including the central section of the Mississippi.

At the risk of over simplification, we may summarize the cultural pattern of the Mississippian in eastern Arkansas in terms of its material and organizational attributes. The settlement pattern of Mississippian groups was focused on alluvial floodplains. These areas provided expanses of tillable soil which could be easily worked with available wood, bone, and stone agricultural equipment. Maize was the the dominant food crop and was supplemented by beans, squash, and probably a variety of other foods that have low archaeological visibility. Domesticated crops were augmented with wild foods which had contributed to aboriginal diets in the southeast for centuries. These included nuts, berries, persimmons, greens, and roots. Protein sources included deer, turkey, small mammals, migratory water fowl, and aquatic species.

The focus on maize as a primary food crop, and the generally increased commitment to agricultural, had significant impacts on the organizational

complexity of aboriginal societies in eastern Arkansas. The relatively egalitarian Woodland societies of the region were apparently transformed into more hierarchically arranged constructs with new emphases placed on hereditary leadership and the emergence of managerial organizations. This more complex social organization has been generally referred to as a chiefdom.

Increased organizational complexity is marked by the appearance of substructure platform mounds during the Mississippian. These served as the foundations for religious structures and the locations for the residences of high status individuals. Individual status distinctions were reinforced through differential access to non-subsistence items such as conch shell jewelry, native copper, and non-utilitarian chipped stone items. These status distinctions are reflected in variation of Mississippian burials.

During the initial stages of the Mississippian, Woodland-style conical burial mounds were still erected, reflecting continuity in local traditions. Continuity is also reflected in ceramic traditions with the presence of clay tempered wares (Baytown) into the Mississippian. These were augmented by shell tempered plain and cordmarked ceramics through time. After about A.D. 1000 shell tempered ceramics were the dominant types in Mississippian assemblages.

The chronology for the Mississippian is based on the recognition of phases or cultures for the area which are defined on temporal, spatial, and artifactual grounds. Regional chronology building is an outgrowth of the monumental work conducted in the central drainage by Phillips, Ford, and Griffin (1951) during the 1940s. Mississippian sites are commonplace in this portion of Arkansas. The best documented initial Mississippian assemblage comes from the Zebree site in northeast Arkansas (Morse and Morse 1980), which is the type site for the Big Lake phase. Similar components have been recently recognized along the Mississippi drainage just east of the project area at the Shelby Forest site in Tennessee (McNutt 1988). In southern Crittenden County, Early and Middle Mississippian sites have been recorded, but more research is needed before local phases can be defined.

In the late Mississippian period populations began to nucleate along the Mississippi and St. Francis Rivers. Settlement into more compact villages with substantial wattle-and daub houses occurred. Villages were linked to regional mound ceremonial centers which were apparently the focus of important religious and social activities. Most of these activities were associated with the agricultural cycle and mortuary ceremonialism. In the project area, important mound centers during the "mature" Mississippian include the Beck, Belle Meade, and Pouncey sites. Local ceramic variations lead initially to the identification of four distinct phases in the Eastern Lowlands: Kent, Parkin, Nodena, and Walls (Phillips 1970), which are often interpreted as competing chiefdoms. In southern Crittenden County, late Mississippian sites have been previously classified as Walls phase (Phillips 1970), and have been more recently included in both the Kent (House 1982) and Horseshoe

Lake phases (Smith 1990).

THE PROTOHISTORIC PERIOD

Protohistoric occupations (ca. A.D. 1540-1673) in the northeast Arkansas area have been reviewed or summarized by a number of authors (e.g., Phillips et al. 1951; Morse and Morse 1983:305-315; Morse 1990; Williams 1980; Smith 1990:165-169). Initial European contact in the general project area occurred in June 1541, when the de Soto entrada crossed the Mississippi River, and encountered complex Mississippian polities in the Eastern Lowlands of northeastern Arkansas. Descriptions of existing cultures by the de Soto chroniclers are the only historic record of the late prehistoric Mississippian occupations in the region (Brain 1985). The chiefly province of Pacaha has been equated with archaeological Nodena phase. Williams (1980) has identified the Armorel phase as the seventeenth century coalescence of closely related Walls and Nodena phase populations. Horizon markers for the contact period include Chevron glass beads, Clarksdale bells, catlinite pipes, shell "buttons", sherd disks, and distinctive vessels. Several of the more distinctive vessel forms, as well as the sherd disks (gaming pieces ?), of the protohistoric exhibit continuity with the latest pre-contact expressions of ceramic art in the Walls and Nodena phase areas (Childress 1989). While Lewis (1988) has argued strongly for the recognition of astragalus dice as another distinctive protohistoric marker in the central Mississippi drainage, most researchers have been reluctant to accept these artifacts as diagnostic of the period (see Eisenburg 1989). Post-contact burial practices shifted to secondary interment in large earthen urns, demonstrating associations with the late Alabama River phase along the upper section of the Tombigbee drainage.

HISTORIC OVERVIEW

Early Historic Period (ca. 1700-1860)

Following the de Soto expedition there were no further written descriptions of northeastern Arkansas until 1673, when the Frenchmen Father Marquette and Louis Jolliet travelled down the Mississippi from Canada in canoes. During the 132 years between the de Soto expedition and this first recorded French expedition, the complex Mississippian chiefdoms with large populations disappeared. There is little doubt that disease epidemics introduced by contact with Old World viruses depopulated large areas of the interior southeast, including northeastern Arkansas (Smith 1987; Ramenofsky 1987). At the mouth of the Arkansas River, in 1673, the French encountered the Quapaw, who already possessed such European goods as beads, knives, and hoes. La Salle encountered the Quapaw nine years later, and

Henri de Tonti established Arkansas Post in 1686.

After the initial European discovery, Arkansas alternately was claimed as a possession of Spain ("Florida") or France ("Louisiana"). Both used the native American groups as allies in their wars with the British. During this time, smallpox further reduced the native populations. Spain acquired Louisiana again in 1792. Disrupted native American groups such as the Delaware and Shawnee began moving west of the Mississippi. Cherokee began moving to the St. Francis drainage in 1795. Stringent religious and political requirements kept most American settlers from trying to move to Spanish territory until these strictures were eased at the end of the eighteenth century.

The earliest land records available for Crittenden County show 40 eighteenth century Spanish land grants (Goodspeed 1890:390). One of the earliest settlers was Benjamin Fooy, a native of Holland, who was sent by Don Manual Gayoso de Lemos, Spanish Governor of Louisiana, as a agent to the Chickasaw. In 1797 he moved from Ft. San Fernando de las Barrancas in present day Memphis to a new fort on the west bank of the Mississippi, named "Camp de l'Esperanza" (Hale 1962). The spanish was translated to Camp Hope, and later the town became known as Hopefield. Hopefield was the second European settlement in Arkansas.

The first noted resident in the vicinity of Marion was Augustine Grande, or Grandee, a Spanish sargent who settled there after the Jefferson Purchase. He built a house on one of the ridges in the middle of Lake Grandee, named after him. William Russell, "the most active real estate speculator in Arkansas," acquired much of the land in Crittenden County in the first quarter of the nineteenth century (Woolfolk 1982).

The Jefferson Purchase of 1803 acquired Louisiana territory for the United States, and the area was finally open for American settlement. Arkansas Post was taken over by government traders. Quapaw, Delaware, Chickasaw, and Osage all traded there. Arkansas Post became the capitol of Arkansas territory in 1819. It then had a population of about 60 families. Little Rock became the capitol in 1820.

Crittenden County was created by act of the Arkansas Territorial Legislature in 1825 (Goodspeed 1890:390). The original area of the county included present day Cross, Lee, and St. Francis counties. In 1826, ferry service between Memphis and Hopefield was opened. Steamboats from the Mississippi often docked at Marion during times of high water (Woolfolk 1982). It was also during this period that the Military Road from Memphis to Little Rock was being surveyed. Completed in 1829, the construction of the Military Road greatly facilitated immigration to Arkansas (Chowning 1954:7). The government used this route to move Choctaw and Chickasaw Indians from Mississippi to Oklahoma in the 1830s, and it was dubbed by some the "trail of tears" (Woolfolk 1982). Cherokee who were already living in Arkansas also ceded their lands and moved to Indian territory. The Quapaw had

given up much of their territory as early as 1818, and ceded the final two million acres in 1824. The Native American population was essentially eliminated from Arkansas by 1840.

In 1836, the year Arkansas became a state, Marion was selected as the county seat of Crittenden County. Railroad surveys began in 1850-1851 (Woolfolk 1967). The railroads were important because the swamps of eastern Arkansas made the 133 miles from Hopefield to Little Rock almost intraversable. Early railroads were frequently washed out by floods, but in 1858 the line was completed from Hopefield to Little Rock. During the period from the 1840s up to the Civil War, Crittenden County enjoyed prosperity based on the plantation system. Cotton was the main cash crop.

The Civil War and Reconstruction (ca. 1860-1900)

Early in the war, on June 5, 1862, Federal Troops landed at Mound City, 4 miles east of Marion, and captured Hopefield (Hale 1962). During the Battle of Memphis the next day, two Confederate rams were sunk in the shoals of the Mississippi River out from Hopefield. On February 13, 1863, Hopefield was burned by Federal Troops in retaliation for a raid by Confederate guerillas in which a steamboat and seven barges of coal were sunk. The town never fully recovered.

Period documentation from the reconstruction suggests that the white inhabitants of Crittenden County harbored much resentment against negro office holders and "carpetbaggers." The late nineteenth century was a period of violent racial strife in Marion, and at times the state militia was called in (Woolfolk 1982). The reconstruction period ended in 1874 with the adoption of new State constitution (Goodspeed 1890:392).

Crittenden County witnessed devastating damage in the major floods of 1882, 1883, 1897, and 1912. Little was done to improve the railroads until 1868. Prosperity was enhanced, however, when in May, 1892, the Frisco Railroad bridge over the Mississippi River was opened. It was the first bridge over the Mississippi at Memphis and, at the time, the third largest bridge in the world (Woolfolk 1967).

The Twentieth Century in Eastern Arkansas

Crittenden County has been primarily rural and experienced little growth or population increases prior to the late 1970s. The majority of land annexations in Crittenden County since the early 1900s have occurred in the last thirty years as a result of subdivision developments (Woolfolk 1982) associated with the growth of Memphis and West Memphis.

An agricultural depression after World War I and the nationwide depression of the 1930s severely affected the agricultural economy of Arkansas (Harrison 1954:356). Grain prices declined and property taxes could not be paid. Delinquency resulted in the foreclosure on millions of acres in rural Arkansas, which became state property. Individuals could settle this land by making a small clearing and building a home. They could then gain title to the land by making a nominal investment. Many small households surrounded by 20 to 40 acre plots date to this time period. The four sites reported upon in this report appear to be associated with this phase of Euro-American occupancy within eastern Arkansas.

Since 1933, when the first allotment was placed on cotton, the importance of that crop has declined (Grey and Ferguson 1974:2). Cotton production involved a considerable quantity of laborers, especially in the days when the crop was planted and picked by hand. Even after the introduction of mechanized cotton pickers, weeding was done with hand hoes. The increased use agricultural chemicals put much of the rural population out of work. Today, a more diversified cropping system that includes soybeans, milo, wheat, rice, alfalfa, sorghum, and pasture characterizes most farms in the county. Machinery began to replace livestock as the major source of farm power, and the acreage of corn needed to feed livestock in the county decreased. Farms in Crittenden County have been decreasing in number and increasing in size since 1959.

In the modern era, West Memphis has become the largest city in the county and 77% of the county's population now resides in municipalities (Crittenden County Historical Society n.d.). Service industries have replaced farming in number of people employed.

PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

The area in and around Crittenden County, Arkansas has been the subject of numerous archaeological investigations, beginning in the late nineteenth century with C.B. Moore (1911) and Edward Palmer (1917). Standard references in northeast Arkansas include the report of archaeological investigations on the Cache River (Schiffer and House 1975), the Zebree archaeological project (Morse and Morse 1980), the Village Creek archaeological project (Klinger 1986) and the St. Francis Basin comprehensive overview program (Dekin et al. 1978). Morse and Morse (1983), Klinger et al. (1983), and Lafferty and Watkins (1987) have prepared excellent synthesis and listings of archaeological work in northeast Arkansas by both avocational and professionals archaeologists. The Arkansas Archeological Survey also maintains a comprehensive list of publications and manuscripts available on a county by county basis.

A number of large scale cultural resources surveys have been initiated in recent

years. A survey of 90 miles of the L'Anguille River Basin in Lee, St. Francis, Cross, and Poinsett Counties, in which 222 sites were documented, was conducted by Garrow & Associates for the Memphis District Corps of Engineers (Anderson et al. 1989). This survey documents the nature of human occupation in the L'Anguille basin for the past 11,000 years. Important environmental information was also derived from a pollen sequence obtained from Hood Lake.

Other cultural resource management studies conducted in Crittenden County include work on Big Creek (Dwyer 1978; LeeDecker 1979a; Klinger 1981, 1982, 1983, 1985; McNeil 1984), Blackfish Bayou (LeeDecker 1979b), Little Cypress Bayou (Thomas 1986), Ten Mile Bayou and Fifteen Mile Bayou (Smith 1975), the Wapanocca National Wildlife Refuge (Jackson 1978), and in the West Memphis-Memphis Metropolitan area (Kern 1979). In addition, various surveys by the Corps of Engineers are reported by McNeil (1981, 1985a, 1985b). Investigations in Crittenden County conducted by the Arkansas Archeological Survey are reported by McCurkan (1976), Williams (1988), Martin (1978), Dan Morse (1967), Phyllis Morse (1977), Cande (1980), and Waddell (1981).

Mississippian period sites associated with mound complexes have been the subject of much archaeological interest over the years (see Palmer 1917; Dellinger and Dickinson 1940; Perino 1966, 1967). Building on previous work by Phillips, Ford and Griffin (1951) and Phillips (1970), recent research on the Walls phase is reported by Smith (1990) and Lumb and McNutt (1988). The Parkin phase was the subject of a site cachement analysis by Phyllis Morse (1981). The Parkin phase may be associated with the province of Casqui, documented by the de Soto chroniclers (Morse and Morse 1983:292). East-central Arkansas and the Kent phase in particular has been intensively studied by John House for a number of years (1982).

The Belle Meade and Beck sites, south of the project location, may represent the first towns of the Aquixo encountered by the de Soto entrada west of the Mississippi River (Morse and Morse 1983:296). Belle Meade has been excavated by Memphis State University field schools in recent years. David Dye and Charles McNutt, Memphis State University, Department of Anthropology, utilized a ceramic collection excavated by an amateur archaeologist from the Belle Meade site in a paper utilizing mathematical clustering indices for whole vessel morphology (McNutt and Dye 1988). David Dye and Sheri Moore have also presented the results of excavations of a portion of a burned house floor from the Belle Meade site (Dye and Moore 1989).

Historic archaeology in Arkansas has generally centered on the pre-twentieth century periods. The site of Arkansas Post and the trading post of Caldron have been excavated (Stewart-Abernathy 1982:302). In June, 1988, a number of local and professional archaeologists attempted to conserve and excavate a group of sunken early twentieth century river boats near Hopefield, exposed by record low Mississippi River levels (Stewart-Abernathy 1990).

IV. METHODS AND RESULTS

Methods employed during the original field investigations and subsequent laboratory analysis are detailed below. Review of the techniques used during the field phase are based on our study of the records maintained by the crew and conversations with Jim McNeil. Discussion of laboratory methods and analytical procedures employed is based on our handling of the artifact collections and data generated from the four sites. The results of both of these segments of the investigation are presented below in separate sections and the information is interpreted with reference to the nature of the prehistoric and historic record of Crittenden County.

METHODS OF FIELD INVESTIGATION

Investigation of the four sites that are the focus of this report began in early May, 1990. Identification of the artifact concentrations within the Country Club Gardens permit area was made by Jim McNeil after the area had been plowed and moistened by rain. Survey conditions were reported as excellent and surface visibility was close to 100%. Initial site identification was followed by fieldwork conducted in June. This work consisted of making controlled surface collections from each site and excavation of a 1 x 1 m test unit at Site 1 (3CT267) (see Figure 2 for site locations).

The controlled surface collection strategy employed the use of 5 m square units distributed across the apparent maximum extent of the artifact concentrations. The permit area margin at the south edge of the project zone, defined by a ditch, formed an arbitrary boundary on Sites 2, 3, and 4. Units were identified by the north and west coordinates of the southeastern corner on each site, and these proveniences have been maintained in the current report. The goal of the surface collecting was to obtain a provenienced 25% sample from each site. Actual sample fractions within the grided margins varied between 0.25 and 0.35. A total pick up was executed within each collection unit and all artifacts were separately bagged by square location. The selected squares were oriented along a 45° angel west of grid north and spaced such that no two units were defined by common margins. The distribution of sample units across the site areas is graphically depicted in Figures 3 through 6 and the artifact content by basic category within each unit is provided as Appendix 1. Site maps are based on plots made in the field by the Corps of Engineer crew. Discussion of the individual sites will be pursued in greater detail below.

LABORATORY ANALYSIS

Artifacts collected during the field phase were processed at the facilities of Garrow & Associates, Inc. in Memphis, Tennessee. The work done in the laboratory included washing, counting and analyzing all specimens. Preliminary artifact counts had already been made by Corps of Engineer personnel when the material was received by us, so a portion of the quantification served as a check on these earlier tabulations. No major discrepancies between the two tabulations were noted, and only a single bag, previously recorded as containing two artifacts, was unaccounted for. All of the observations and interpretations contained in this report are based on the tabulations and identifications made in our laboratory.

The artifacts were analysed using a system based on South's (1977) artifact patterning concept. Four attributes for historic artifacts were recorded: Group (this refers to South's Kitchen Group, Architecture Group, etc.), Class (essentially raw material, such as ceramic, glass, metal, etc.), Type (a general artifact type, like pearlware), and Subtype (a specific artifact type, such as handpainted pearlware). The frequency of each category was computed against the artifact total for each site and any observed variation in the resulting frequencies was used to compare the results to known patterns and interpret site function(s). The patterns for the four sites are summarized in Table 1. The tabulations for the Site 1 artifact pattern are based on the combined assemblage from the controlled surface collection and excavation unit (see Appendices 1 and 2). Historic site patterns will be discussed in greater detail below.

Kitchen ceramics are divided among three categories: earthenware, stoneware, and porcelain, with earthenware being the most commonly recovered historic ceramic from nineteenth-century occupations. The definition of nineteenth-century earthenware types is less readily accomplished than for earlier ceramics, however. Ceramic types that developed following pearlware are primarily characterized by a decrease in the degree of cobalt tinting and the eventual creation of "white" ceramics referred to in the archaeological literature as "whitewares." In 1813, C. J. Mason and Company of England introduced a new ceramic type known variously as "ironstone" or "stone china." This was an extremely high-fired ware which was normally vitrified, and thus technically a stoneware. However, vitrification did not always occur, and this characteristic cannot always be used with assurance to separate ironstones from other refined earthenwares. As archaeologist and ceramic historian George Miller has noted (1980:2), drawing distinctions between the various white-bodied wares of the nineteenth century is difficult to accomplish. Research by Miller (1980) indicates that surface decoration, more than ware type, determines the relative socio-economic status of different historic ceramics and, following Miller, many archaeologists are now focusing their analyses on decorative motifs and shying away from the creamware - pearlware - whiteware - ironstone debate. However, work by Garrow (1982) at the Washington Civic Center site suggests a

Table 1. Historic Artifact Patterns on Four Sites Within the Country Club Gardens Permit Area

GROUPS	SITE 1 (3CT267) #	SITE 1 (3CT267) %	SITE 2 (3CT268) #	SITE 2 (3CT268) %	SITE 3 (3CT269) #	SITE 3 (3CT269) %	SITE 4 (3CT270) #	SITE 4 (3CT270) %
KITCHEN								
CERAMIC	50	8.1	8	6.0	36	20.3	10	5.0
GLASS	559	90.3	112	83.6	116	65.5	173	86.9
METAL	0	0.0	0	0.0	0	0.0	0	0.0
PLASTIC	0	0.0	0	0.0	0	0.0	0	0.0
GROUP Σ	609	98.4	120	89.6	152	85.9	183	91.9
ARCHITECTURE								
BRICK	6	1.0	4	3.0	11	6.2	6	3.0
WINDOW GLASS	0	0.0	0	0.0	9	5.1	8	4.0
NAILS	0	0.0	0	0.0	0	0.0	0	0.0
HARDWARE	0	0.0	0	0.0	1	0.6	0	0.0
TILE	0	0.0	2	1.5	0	0.0	0	0.0
GROUP Σ	6	1.0	6	4.5	21	11.9	14	7.0
FURNITURE								
GROUP Σ	0	0.0	0	0.0	0	0.0	0	0.0
ARMS								
PROJECTILES	1	0.2	0	0.0	2	1.1	0	0.0
GROUP Σ	1	0.2	0	0.0	2	1.1	0	0.0
CLOTHING								
BUTTONS	1	0.2	0	0.0	0	0.0	0	0.0
BUCKLES/FASTEN	1	0.2	0	0.0	0	0.0	0	0.0
SHOE	1	0.2	1	0.7	0	0.0	0	0.0
GROUP Σ	3	0.5	1	0.7	0	0.0	0	0.0
PERSONAL								
COMB	0	0.0	0	0.0	1	0.6	0	0.0
GROUP Σ	0	0.0	0	0.0	1	0.6	0	0.0
TOBACCO								
GROUP Σ	0	0.0	0	0.0	0	0.0	0	0.0
ACTIVITIES								
TOOLS	0	0.0	3	2.2	1	0.6	2	1.0
TOYS	0	0.0	2	1.5	0	0.0	0	0.0
AUTO	0	0.0	2	1.5	0	0.0	0	0.0
GROUP Σ	0	0.0	7	5.2	1	0.6	2	1.0
GROUP TOTALS	***619***	***100.1***	***134***	***100.0***	***177***	***100.1***	***199***	***98.9***
MISC.								
UNIDEN. METAL	10		3		2		10	
PLASTIC FRAGS.	4		0		1		0	
COAL/CINDERS	0		2		0		1	
RUBBER FRAGS.	2		3		2		0	
ROCK	1		6		4		1	
GROUP Σ	17		14		9		12	
BOTANICAL								
WOOD/CHARCOAL	0		0		1		0	
GROUP Σ	0		0		1		0	
FAUNAL	0		0		0		0	
GRAND TOTALS	***636***		***148***		***187***		***211***	

more accurate resolution to the difficulties in distinguishing whiteware fromironstone. Working with exceptionally large assemblages from tightly defined nineteenth century contexts, Garrow (1982) was able to define a refined earthenware ceramic with a cream-tinted paste and an opaque white glaze which was susceptible to crazing. He noted that the paste of this ceramic was more large-grained than comparable ironstones and decorated earthenwares, and Garrow defined this type as cream-colored ware, assuming it was the least expensive plain earthenware ceramic referred to in the price-fixing guides cited by Miller (1980). Cream colored ware (referred to in shorthand as CC ware by Garrow) is described as exhibiting the following characteristics: a yellow to ivory body cast; a grainy paste which was apparently not as well-fired as ironstone, and was hence lighter by volume than other ceramics; and a glaze which is susceptible to crazing. Following Miller (1980), Garrow divides white-bodied late nineteenth century ceramics into two categories: late refined earthenwares and ironstones. CC ware and the various decorative types found on nineteenth century earthenwares (e.g. hand painting, transfer printing, edging, sponging, etc.) are included in the Late Refined Earthenware category, while both plain and decorated ironstone are included in the ironstone group. The characteristics of ironstone recognized by Garrow (1982) include a refined, stark white, bluish, or gray paste; and a dense body and greater weight than comparable sherds.

While refined tablewares contributed the majority of sherds from the site assemblages, several stoneware sherds were also recovered. Stonewares, generally employed for utilitarian purposes, were made throughout the United States. Four glaze types are prevalent on these wares: (1) Alkaline, a sand and ash glaze indigenous to the Deep South, and used from ca. 1820 until the 1890s; (2) Albany Slip, a clay slip glaze mined for the Albany, New York, region, and used from the early 1800s to the present; (3) Salt-glazing, which is one of the oldest known glazes applied to stoneware, and which had a focus in the northeastern U.S. but was found throughout the country; and (4) Bristol Slip, a chemical and clay slip glaze which was made popular in the U.S. after 1884 and was used almost always exclusively after 1920 (Greer 1981:211-212). The combined use of Albany and Bristol glazes on single vessels probably dates from the period between 1884 and 1920 (Greer 1981:212).

In addition to refined and coarse earthernware ceramics, a large quantity of bottle glass was recovered from all of the sites (Appendices 1 and 2; Table 1). While most early glass was free-blown, mold-blown and machine made bottles became common during the nineteenth and twentieth centuries. Mold-blown glass occurs after ca. 1818. Machine made bottles were used in commercial production beginning in 1893, although fully automatic devices were not introduced until 1917 (Jones and Sullivan 1989:39). All of the identifiable bottle glass recovered from the Country Club Gardens project area is machine made. Of particular note are several pieces of solarized amethyst glass. "Sun colored amethyst", produced with manganese, was most common in the period including the last quarter of the nineteenth century until World War I (Jones and Sullivan 1989:13). Amethyst glass thus provides a

terminus ante quem date of 1916 when found in historic site collections.

Other important artifacts recovered from the sites include several small fragments of unglazed brick. The specimens were too fragmentary to identify method of manufacture. In general, the low quantities of brick, window glass, and other architectural artifacts and the complete absence of nails suggest that all four sites represent late nineteenth - early twentieth century kitchen refuse scatters, and that any possible structural remains are located outside the project boundaries (see also Buchner and Weaver 1990). However, it is also possible that the scatters represent the archaeological signature of an occupational pattern that is not well understand strictly from a material perspective. This latter possibility will be explored in greater detail in the discussion section at the end of this chapter.

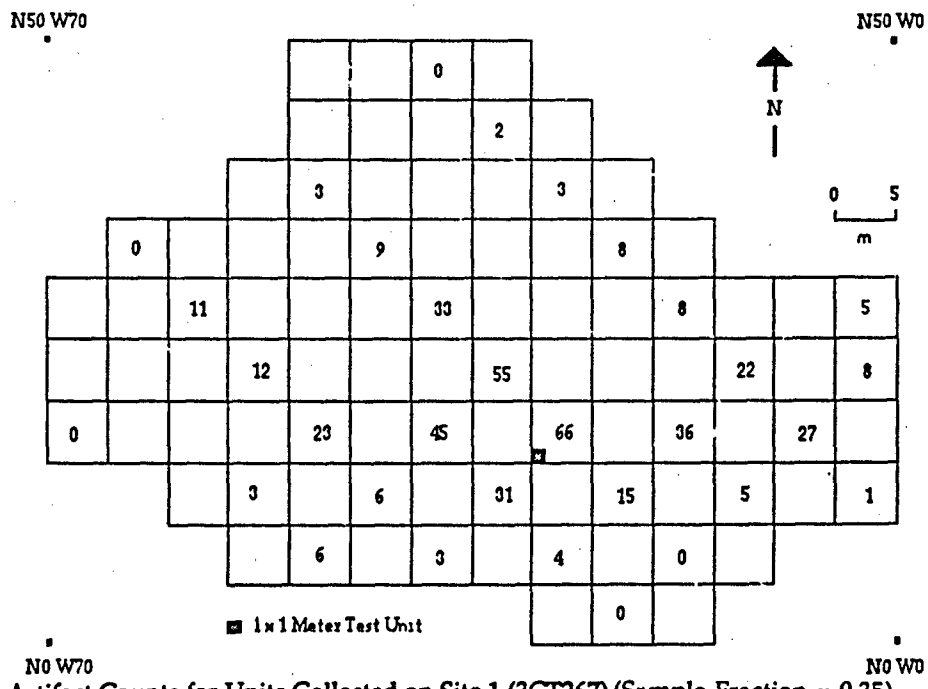
RESULTS

Archaeological Site Characteristics

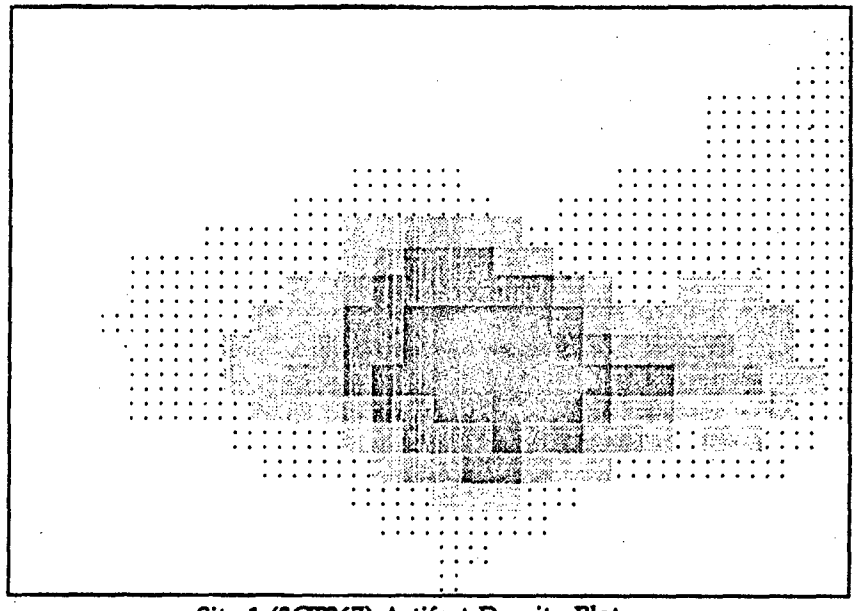
Site 1 (3CT267). This site was contained completely within the project area boundaries (Figure 2) and yielded the largest collection of material of the four clusters. The majority of the recovered material from the surface collection was glass (88%). The sample fraction from the grided area was 0.35. The controlled surface collection data (Appendix 1, Figure 3) was used to develop a contour map of the artifact density on the site with a software application called *MacContour*. This program utilizes coordinate values and associated quantities to extrapolate density patterns across a defined two-dimensional space (see Figure 3). The contour plot shows the site as an ellipsoidal distribution with the long axis oriented roughly east-west. No attempt was made to produce contours of individual artifact groups because the sample sizes were so small.

A 1 x 1 m excavation unit was placed at N15 W29, within the approximate center of the high-density surface artifact zone (Figure 4). The excavation revealed a sandy silt plow zone stratum between the surface and 15 cm. Below this zone to the termination of the unit at 50 cm below surface a homogeneous silty clay stratum was recorded. No Munsell designations of the soil hue or chroma were obtained. Artifacts appeared to be restricted to the plow zone (Appendix 2) and the western wall profile depicted in Figure 4 records the location of a metal spike and a fragment of blue glass near the contact zone of the two strata. Most of the artifacts (84%) were recovered in the upper 10 cm of the test unit (Appendix 2). Like the surface collection from Site 1, the excavated collection was dominated by glass. In fact, the frequency of glass in the unit was identical to that from the surface (88%).

The most informative archaeological specimens recovered from Site 1 were the ceramics. All the recovered sherds date to the historic period and are listed below.



Artifact Counts for Units Collected on Site 1 (3CT267) (Sample Fraction = 0.35)



Site 1 (3CT267) Artifact Density Plot

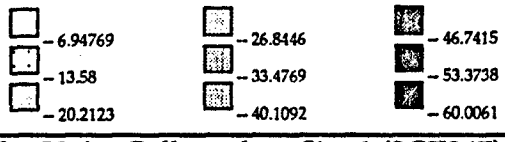


Figure 3. Artifact Counts for Units Collected on Site 1 (3CT267) and Extrapolated Artifact Density Plot.

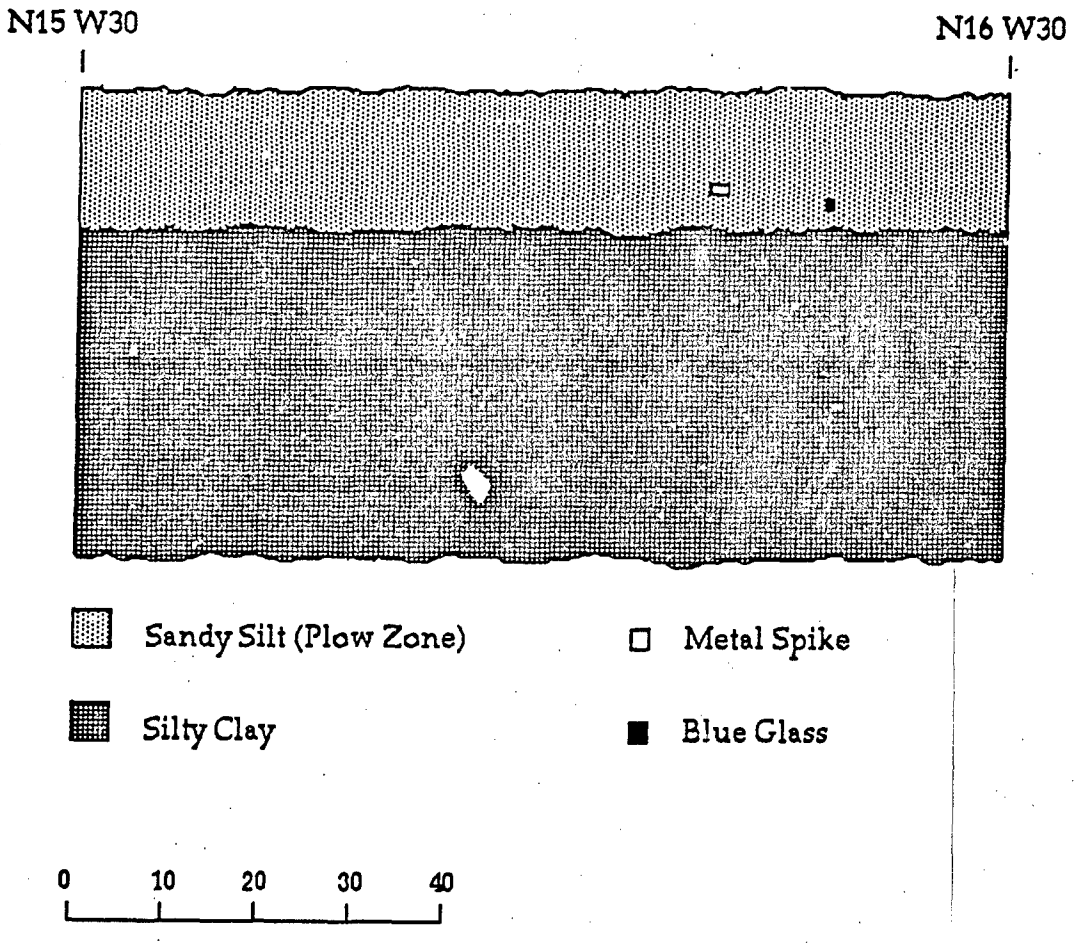


Figure 4. West Wall Profile of Site 1 (3CT267) Test Unit at N15 W29.

Table 2. Historic Ceramics from Site 1 (3CT267)

Surface Collection:

CERAMIC TYPE	COUNT
Plain Cream Colored (CC) Ware	16
Molded CC Ware	2
Decal Print on CC Ware	1
Hand Painted CC Ware	1
Buff Paste Stoneware, Bristol Interior, Unglazed Exterior	2
Buff Paste Stoneware, Bristol Interior/Exterior	10
Plain White Ironstone	5
Plain Ivory Colored Ware	2
Polychrome Decal Print on Ivory Colored Ware	2
Semi-porcelain "Hotel" Ware, Green Banding	1
Subtotal	42

One by One Meter Test Unit, Levels I and II:

CERAMIC TYPE	COUNT
Plain CC Ware	7
Unidentified Polychrome on CC Ware	1
Subtotal	8
Total	50

Examination of the artifact pattern for Site 1 (Table 1) and consideration of the nature of the ceramic assemblage allows us to offer propositions concerning site function and the temporal span represented by the artifact collection. The dominance of glass on the site is overwhelming. All of the recovered specimens are examples of bottle glass and are thus included in the kitchen group. Glass fragments large enough to be confidently identified all appeared to be machine made. The ceramics are examples from the late nineteenth-early twentieth century. The Bristol slip stonewares are particularly diagnostic and may indicate that the entire

assemblage is post-1920. This identification is strengthened by the fact that only two examples of amethyst glass were recovered from Site 1.

Site 2 (3CT268). Site 2 is located in the southeastern corner of the permit area at the edge of a small artificial ditch (Figure 2). Like Site 1, glass fragments constituted the majority (77%) of the items recovered from the surface collection (Appendix 1, Table 1). The sample fraction obtained from the grided portion of the site was 0.26. A contour map of the artifact density based on the frequency of items per square indicates that the scatter is roughly centered at N5 W30 (Figure 5). It appears to be an oval concentration oriented along a northeast-southwest axis. The southern portion of the site has probably been destroyed by ditching. The extreme concentration of artifacts in a single category obviated any attempt to examine distributional patterning of other items, so the extrapolated plot essentially represents the distribution of glass across the site area.

Only eight ceramic sherds were recovered from Site 2. These are summarized below in Table 3.

Table 3. Historic Ceramics from Site 2 (3CT268)

Surface Collection:

CERAMIC TYPE	COUNT
Plain Cream Colored (CC) Ware	3
Buff Paste Stoneware, Albany Interior, Bristol Exterior	1
Yellow Ware	1
Plain White Ironstone	1
Plain Blue Ironstone	1
Unidentified (too small)	1
Total	8

The CC ware suggests a site date between the mid-nineteenth and mid-twentieth centuries. The single stoneware sherd combining the use Albany and Bristol slips dates the assemblage to between ca. 1884 and 1920. A single fragment of amethyst glass was also recovered.

While the Site 2 assemblage contains a greater frequency of artifacts within the architecture group than that from Site 1, the counts are very small and the lack of

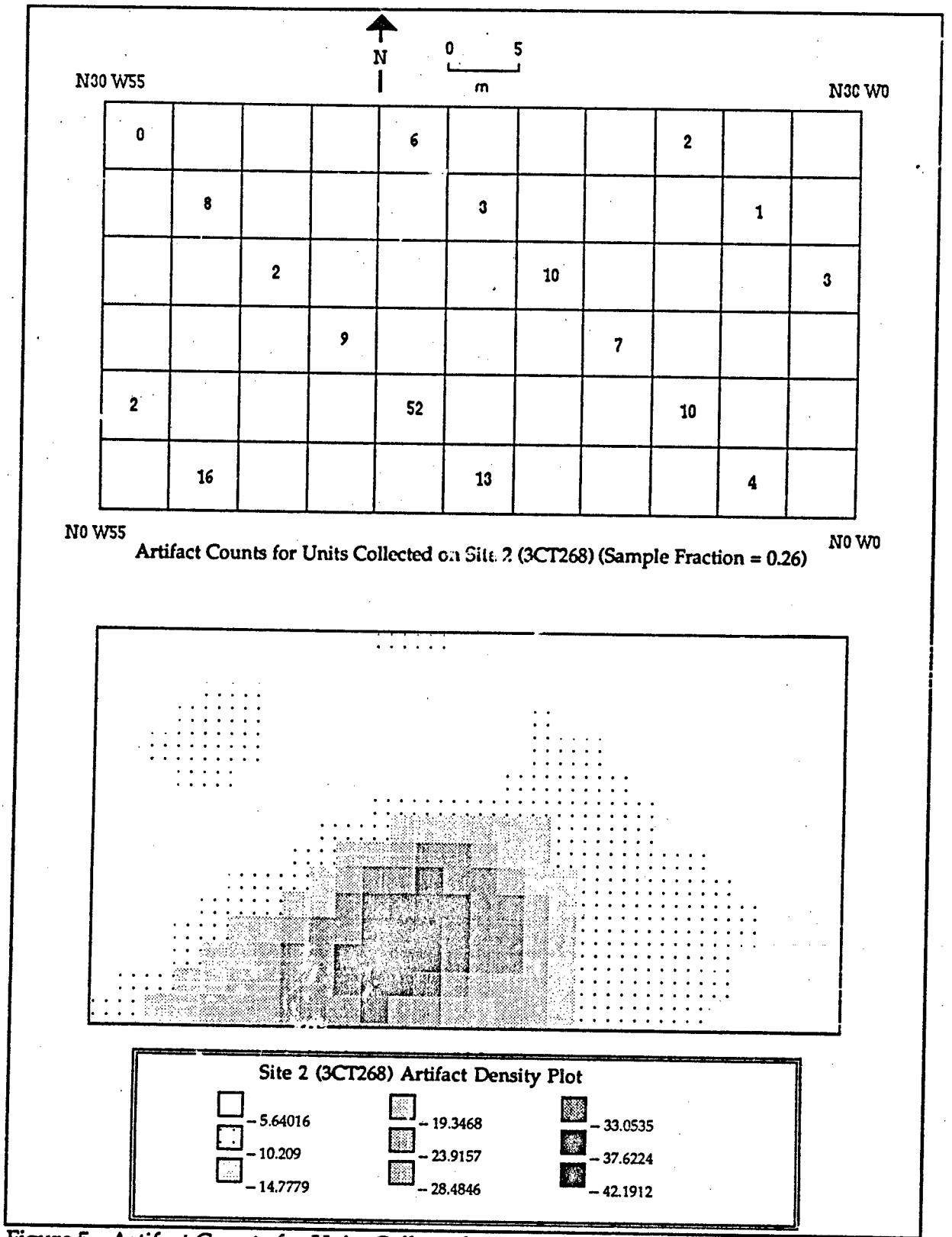


Figure 5. Artifact Counts for Units Collected on Site 2 (3CT268) and Extrapolated Artifact Density Plot.

window glass, nails, or roofing materials renders association of the the site with a structure problematic.

Site 3 (3CT269). Site 3 is located on the southern edge of the permit area between sites 2 and 4. The surface collection made at this location was the most varied overall and exhibited the lowest frequency of glass (Appendix 1, Table 1). The sample fraction from the grided area was 0.25. Raw data from the sampled squares were used to produce the density plot shown in Figure 6. This plot indicates that the site has a roughly circular distribution and, like Site 2, has been disturbed by ditch excavation along the southern margin.

In addition to exhibiting a lower frequency of glass fragments, Site 3 also contained by far the largest percentage of amethyst glass (n = 10; 8% of all glass).

Although the architecture group has a better representation on this site than any of the other concentrations (Table 1), an interpretation of this scatter as indicative of a demolished structure seems untenable. The lack of nails or roofing materials and the extremely small size of the brick fragments suggests that this site also represents a kitchen refuse scatter.

Historic ceramics recovered from Site 3 contrast rather sharply with the other site assemblages in containing a large percentage of ironstone and only a single example of late refined earthenware. No plain CC ware was contained in the collection. The ceramics are summarized below in Table 4.

Table 4. Historic Ceramics from Site 3 (3CT269)

Surface Collection:

CERAMIC TYPE	COUNT
Buff Paste Stoneware, Albany Interior, Bristol Exterior	3
Buff Paste Stoneware, Bristol Interior, Eroded Exterior	2
Buff Paste Stoneware, Albany Interior/Exterior	2
Plain White Ironstone	21
Blue Colored Glazed White Ironstone	1
Plain Blue Ironstone (one with backmark)	4
Semi-porcelain Refined Earthenware	1
White Hard Paste Porcelain	1
Polychrome Late Refined Earthernware, Floral Decal	1
Total	36

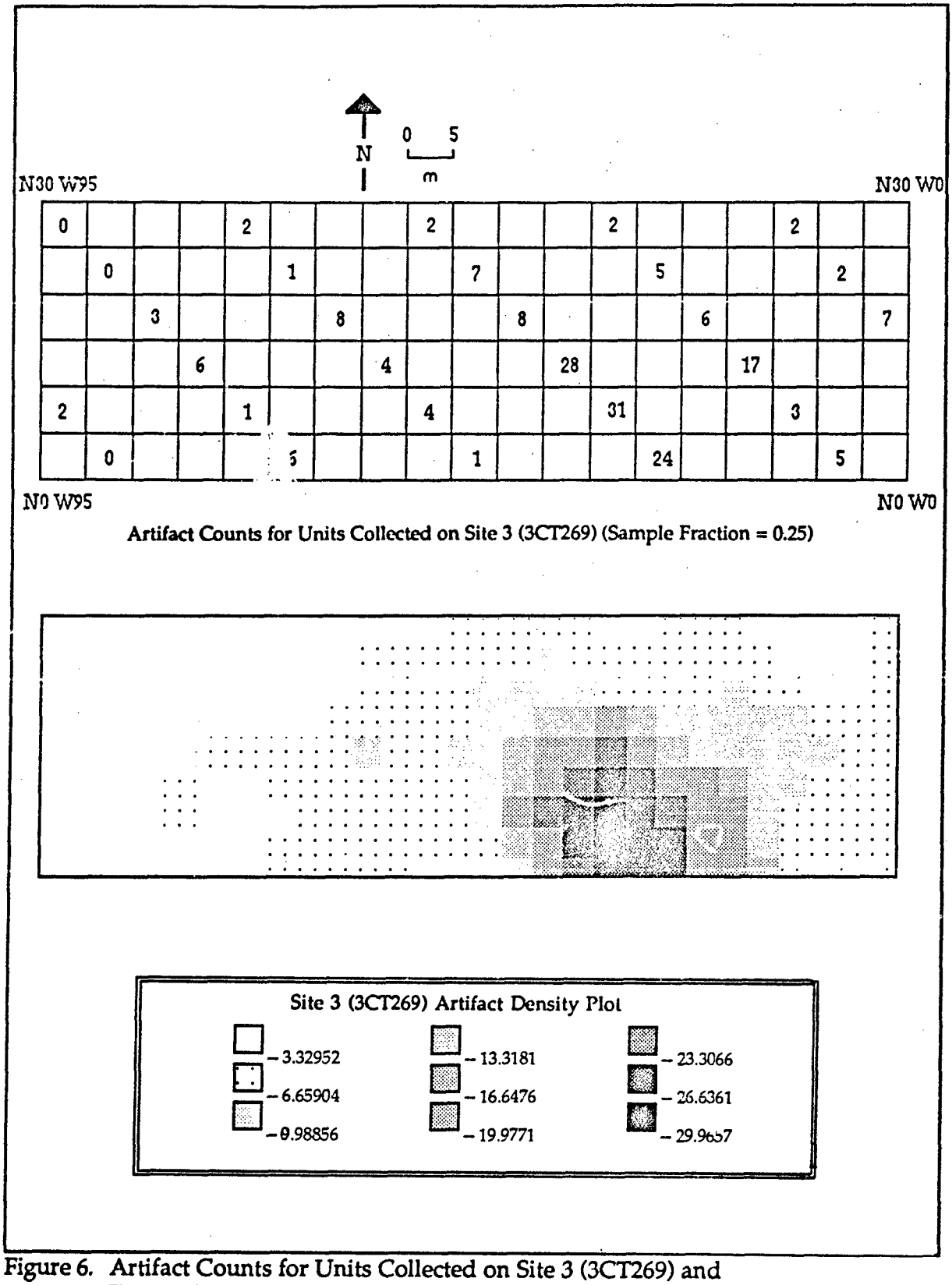


Figure 6. Artifact Counts for Units Collected on Site 3 (3CT269) and Extrapolated Artifact Density Plot.

The backmark from the piece of blue ironstone is the only identification mark found on any of the ceramics from the four site collections. It reads "....D MEAKIN...." on the top line of the backmark with "....LAND." below. The sherd comes from a ceramic vessel produced by the Alfred Meakin pottery of England (Godden 1964:425-426), which produced refined earthenwares from 1875 to the present. Not enough of the backmark is present to determine if Meakin is followed by "Ltd.", an abbreviation appended to the company name between 1897 and ca. 1930 (Godden 1964:425). Likewise, it is not known whether the word "ENGLAND" is preceded by the words "MADE IN." This would clearly signify a twentieth century dating for the piece (Godden 1964:11). The addition of the word "ENGLAND" is post 1891. The backmark most closely matching the one from Site 3 is found on an item called "*Bleu de Roi*" (Godden 1964:425) made after ca. 1914. This is the only illustrated Alfred Meakin backmark that contains a period after the word England. However, it is not known how temporally sensitive the addition of a period is. The most that can be said is that the sherd is from a vessel produced after 1891.

The ironstone backmark, amethyst glass, and Albany/Bristol stoneware sherd from Site 3 all suggest a date range from the late nineteenth to early twentieth century.

Site 4 (3CT270). Located in the southwestern corner of the permit area, Site 4 produced an historic period assemblage almost identical to that from Sites 1 and 2. The collection was dominated by broken glass (82% of all items recovered) and most of the artifacts were associated with the kitchen group (Appendix 1, Table 1). A sample fraction of 0.32 was obtained from the grided area. The contour plot based on the sampled squares indicates that the scatter was the smallest of the four, roughly circular, and contained primarily within the collection area (Figure 7).

Refined earthenwares recovered from Site 4 were roughly divided between CC ware and ironstone (Table 5). In contrast to the other sites, no stoneware was found.

Table 5. Historic Ceramics from Site 4 (3CT270)

Surface Collection:

CERAMIC TYPE	COUNT
Plain CC Ware	4
Plain White Ironstone	1
Blue Colored Glazed White Ironstone	2
Blue Colored Glazed Blue Ironstone	3
Total	10

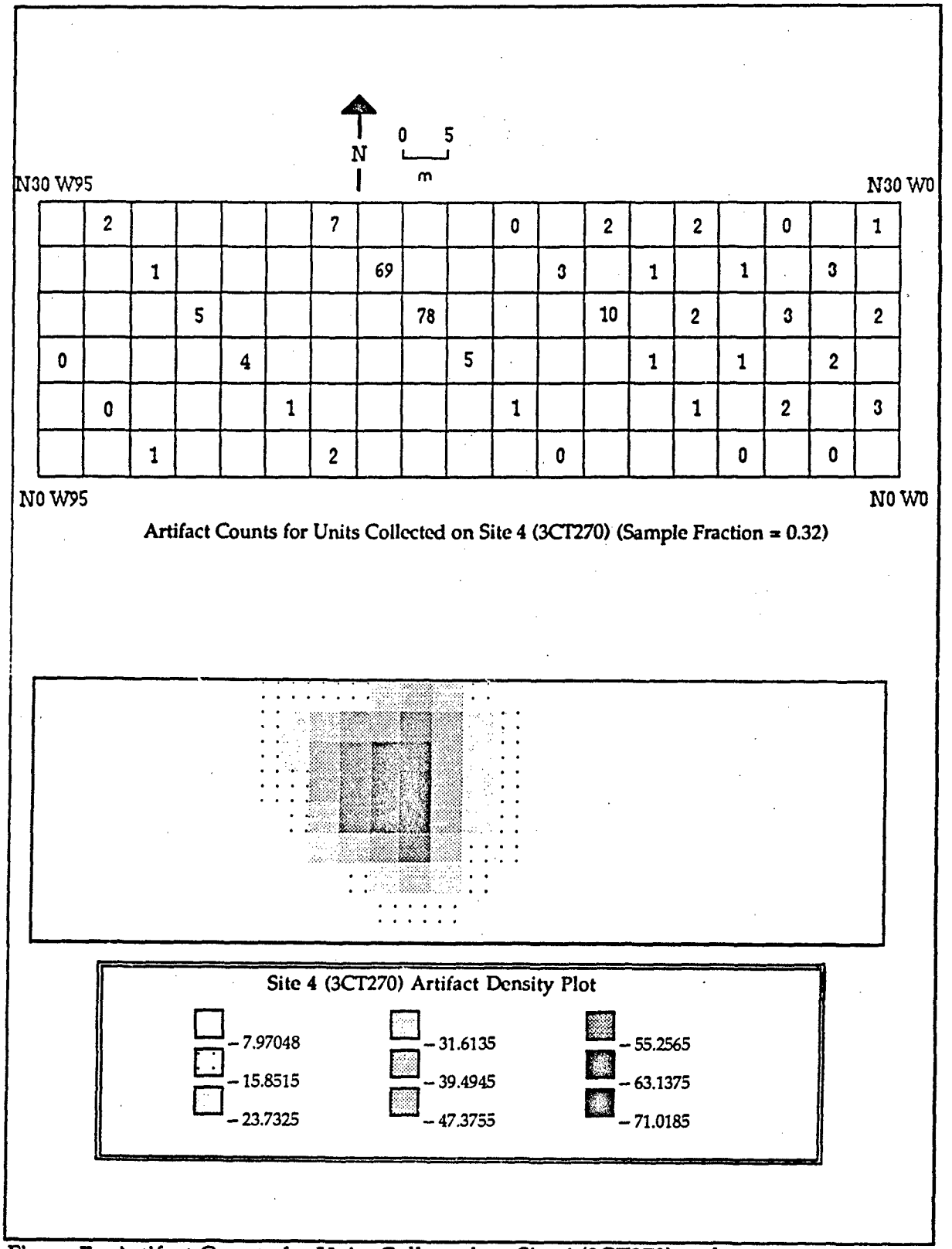


Figure 7. Artifact Counts for Units Collected on Site 4 (3CT270) and Extrapolated Artifact Density Plot.

Amethyst glass was lacking from Site 4. The glass sample in general contained a large amount of clear and amber machine made glass that was quite modern in appearance (probably broken beer and soft drink bottles). The suggested date range for the scatter is early to late twentieth century.

Site 4 is unique within the permit area in being the only artifact concentration that contained prehistoric material (Appendix 1). Three sherds of Baytown Plain (Phillips 1970:47-57) pottery were found in the artifacts from the controlled surface collection, each located in a different unit. No subsurface testing was undertaken at Site 4, so it is impossible to tell if the sherds are derived from a buried component. The site margins appear to have been defined by the controlled surface collection and the area in question would thus be quite small (ca. 500 m^2). It is also possible that the Baytown sherds are associated with a prehistoric site located outside of the permit area.

Discussion

As indicated in the previous consideration of the temporal span of artifact types and in the individual site descriptions, the four analyzed site collections seem to cluster in the decades just prior to and immediately after the beginning of the twentieth century. Materials from the collections are largely associated with the kitchen group (Table 1) and no unequivocal evidence was found on any of the sites to support an argument for the former presence of a structure. All four sites may thus be spacially segregated kitchen refuse scatters associated with the occupation of small plots of lands by Euroamerican subsistence farmers. The single test unit placed on Site 1 (Figure 4) suggests that all four scatters may be restricted to the plow zone (upper 20 cm), but in the absence of subsurface testing on the other sites, this is merely speculation.

Historic records related to early twentieth century eastern Arkansas and existing knowledge about the tenant farm settlement pattern of the period also suggest other interpretive possibilities for the artifact patterns defined within the permit area. It is known that small 20 to 40 acre plots were maintained by Euroamerican tenant farmers within the eastern lowlands between the end of the Civil War to approximately 1950 (Stewart-Abernathy and Watkins 1982:HA87-88). After this time, most small-scale subsistence farming was terminated by the consolidation of large tracts of land for agribusiness concerns and shifts in the labor force towards urban centers. The archaeological record of the ca. 1870 to 1950 tenant farm settlement pattern is characterized by structural remains, associated outbuildings, and possible shallow midden deposits. Arrangement of the farm steads is frequently correlated with roads or ditches and individuial plots may exhibit spacings on the order of 100 m.

Sites within the permit area fit this pattern in some respects and diverge from it in

others. The linear arrangement of site 2, 3, and 4 along a ditch paralleling a quarter section line and the seperation of the clusters by distances of ca. 100 m is certainly suggestive. However, the low quatities of structural debris argue against the former presence of even diminutive houses. Is it possible that some extremely short-term occupations might be characterized by the dismantling of structural units such as walls and roof elements so that shacks could be erected in a new location? This type of extreme raw material conservation, if it were indeed practiced, would probably be associated with very low socio-economic status. Candidates for this type of hypothetical activity in the Mid-southern United States are African-american subsistence farmers. This is a proposition that should certainly be subjected to further testing through archival research and field work geared to the generation of surface collections from occupational sites with known histories. The resulting patterns could then compared to those presented here.

It is interesting to note that ironstone and late refined earthenware sherds (mainly CC ware) exhibited a markedly distinctive distributional pattern among the four analyzed sites (see Tables 2 through 5). In particular, ironstone exhibited the highest frequency on Site 3, while the Site 1 collection was primarily characterized by plain and decorated CC ware and stoneware. This may indicate a degree of socio-economic variation since the assemblages are roughly contemporaneous. Interpretations based on the distributional variation of sherd types, or any other diagnostics, should be viewed with caution in this case, however, because the sample sizes are so small.

V. CONCLUSIONS AND RECOMMENDATIONS

This report has provided a brief review of the cultural chronology for a portion of the central Mississippi River valley and discussed environmental conditions pertinent to the Country Club Gardens permit area within Crittenden County, Arkansas. The preceding chapter has presented the results of the analysis of four collections of archaeological material obtained from within the permit area boundaries. Site material consisted principally of artifacts derived from controlled surface collections, although material from a 1 x 1 m test unit placed on Site 1 (3CT267) was also analysed. Interpretations of the sites based on the assemblage content have also been offered. Our analyses lead us to the conclusion that the four sites are dominated by historic components dating to no earlier than the last quarter of the nineteenth century and we tentatively suggest that these components represent concentrated kitchen refuse scatters unassociated with contemporaneous structural remains. In addition to turn-of-the-century artifacts, all of the sites contain at least *some* very recent refuse.

We have also suggested the alternative possibility that the scatters derive from short-term habitation by African-American tenant farmers. Ephemeral indications of occupation may be reflected in the consistent artifact patterns exhibited on the four sites. This pattern is one dominated by kitchen group artifacts, particularly glass. More research is needed before this proposition can be thoroughly tested. One step that should be taken to increase understanding of the types of deposits considered in this report is to incorporate archival research and title searches into phase II investigations.

Subsurface testing conducted at Site 1 (3CT267) revealed artifact concentrations identical to the surface scatter that were restricted to the upper 20 cm of the plow zone deposit. No apparent features were recorded. Based on information derived from the limited testing at Site 1, the spacial proximity of the sites within the project area, the general similarity of the artifact patterning on all four sites (Table 1), and the contemporaneity of the historic components, we conclude that the archaeological fieldwork conducted is sufficient to enable a determination of eligibility to be made. None of the cultural resources appear to meet the criteria established for nomination to the National Register of Historic Places. This decision is complicated somewhat by the presence of prehistoric pottery on Site 4 (3CT270). However, because the prehistoric sherd count on this site was so small (n = 3) and no other prehistoric items were recovered, no additional work is warranted.

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APPENDICES

APPENDIX 1: Controlled Surface Collection Data

APPENDIX 1: CONTROLLED SURFACE COLLECTION DATA

Site 1 (3CT267), Artifact Counts by Collection Unit and Category

	Artifact Categories							
Provenience	Prehistoric Ceramic	Historic Ceramic	Glass	Shotgun Shell	Metal	Brick	Other	Count
N0 W20	-	-	-	-	-	-	-	0
N5 W15	-	-	-	-	-	-	-	0
N5 W25	-	1	3	-	-	-	-	4
N5 W35	-	1	2	-	-	-	-	3
N5 W45	-	-	5	-	-	-	1	6
N10 W0	-	-	1	-	-	-	-	1
N10 W10	-	-	3	-	1	-	1	5
N10 W20	-	2	13	-	-	-	-	15
N10 W30	-	4	25	-	-	-	2	31
N10 W40	-	-	6	-	-	-	-	6
N10 W50	-	1	2	-	-	-	-	3
N15 W5	-	4	23	-	-	-	-	27
N15 W15	-	4	32	-	-	-	-	36
N15 W25	-	4	62	-	-	-	-	66
N15 W35	-	2	41	-	-	1	1	45
N15 W45	-	2	20	-	-	1	-	23
N15 W65	-	-	-	-	-	-	-	0
N20 W0	-	-	8	-	-	-	-	8
N20 W10	-	-	21	-	-	1	-	22
N20 W30	-	1	54	-	-	-	-	55
N20 W50	-	3	9	-	-	-	-	12
N25 W0	-	2	3	-	-	-	-	5
N25 W15	-	1	6	1	-	-	-	8
N25 W35	-	6	26	-	-	-	1	33
N25 W55	-	-	10	-	1	-	-	11
N30 W20	-	2	5	-	-	-	1	8
N30 W40	-	-	9	-	-	-	-	9
N30 W60	-	-	-	-	-	-	-	0
N35 W25	-	2	1	-	-	-	-	3
N35 W45	-	-	3	-	-	-	-	3
N40 W30	-	-	2	-	-	-	-	2
N45 W35	-	-	-	-	-	-	-	0
Σ	0	42	395	1	2	3	7	450

Site 2 (3CT268), Artifact Counts by Collection Unit and Category

	Artifact Categories							
Provenience	Prehistoric Ceramic	Historic Ceramic	Glass	Shotgun Shell	Metal	Brick	Other	Count
N0 W5	-	-	3	-	1	-	-	4
N0 W25	-	-	11	-	1	-	1	13
N0 W45	-	1	12	-	1	1	1	16
N5 W10	-	2	6	-	1	-	1	10
N5 W30	-	3	42	-	2	1	4	52
N5 W50	-	-	-	-	1	-	1	2
N10 W15	-	-	3	-	1	-	3	7
N10 W35	-	-	9	-	-	-	-	9
N15 W0	-	-	2	-	-	1	-	3
N15 W20	-	-	8	-	-	1	1	10
N15 W40	-	1	1	-	-	-	-	2
N20 W5	-	-	-	-	-	-	1	1
N20W25	-	-	2	-	-	-	1	3
N20 W45	-	-	8	-	-	-	-	8
N25 W10	-	-	2	-	-	-	-	2
N25 W30	-	1	3	-	-	-	?	4
N25 W50	-	-	-	-	-	-	-	0
Σ	0	8	112	0	8	4	16	148

Site 3 (3CT269), Artifact Counts by Collection Unit and Category

	Artifact Categories							
Provenience	Prehistoric Ceramic	Historic Ceramic	Glass	Shotgun Shell	Metal	Brick	Other	Count
N0 W5	-	1	3	-	-	-	1	5
N0 W25	-	6	16	-	-	2	-	24
N0 W45	-	-	1	-	-	-	-	1
N0 W65	-	-	5	-	-	1	-	6
N0 W85	-	-	-	-	-	-	-	0
N5 W10	-	-	1	1	1	-	-	3
N5 W30	-	10	19	-	1	-	1	31
N5 W50	-	-	3	-	-	1	-	4
N5 W70	-	-	1	-	-	-	-	1
N5 W90	-	-	1	-	-	1	-	2

Site 3 (3CT269), Artifact Counts by Collection Unit and Category (con't)

	Artifact Categories							
Provenience	Prehistoric Ceramic	Historic Ceramic	Glass	Shotgun Shell	Metal	Brick	Other	Count
N10 W15	-	2	14	-	-	-	1	17
N10 W35	-	7	20	-	-	1	-	28
N10 W55	-	1	1	-	-	2	-	4
N10 W75	-	2	2	-	-	-	2	6
N15 W0	-	1	6	-	-	-	-	7
N15 W20	-	1	4	-	1	-	-	6
N15 W40	-	-	8	-	-	-	-	8
N15 W60	-	-	5	-	-	1	2	8
N15 W80	-	-	3	-	-	-	-	3
N20 W5	-	1	-	-	-	-	1	2
N20 W25	-	2	3	-	-	-	-	5
N20 W45	-	1	4	-	-	1	1	7
N20 W65	-	-	-	-	1	-	-	1
N20 W85	-	-	-	-	-	-	-	0
N25 W10	-	1	1	-	-	-	-	2
N25 W30	-	-	2	-	-	-	-	2
N25 W50	-	-	1	-	-	1	-	2
N25 W70	-	-	1	1	-	-		2
N25 W90	-	-	-	-	-	-	-	0
Σ	0	36	125	2	4	11	9	187

Site 4 (3CT270), Artifact Counts by Collection Unit and Category

	Artifact Categories							
Provenience	Prehistoric Ceramic	Historic Ceramic	Glass	Shotgun Shell	Metal	Brick	Other	Count
N0 W5	-	-	-	-	-	-	-	0
N0 W15	-	-	-	-	-	-	-	0
N0 W35	-	-	-	-	-	-	-	0
N0 W60	-	-	1	-	1	-	-	2
N0 W80	-	-	1	-	-	-	-	1
N5 W0	-	-	2	-	1	-	-	3
N5 W10	1	-	1	-	-	-	-	2
N5 W20	-	-	1	-	-	-	-	1
N5 W40	-	-	1	-	-	-	-	1
N5 W65	-	-	1	-	-	-	-	1

Site 4 (3CT270), Artifact Counts by Collection Unit and Category (con't)

	Artifact Categories							
Provenience	Prehistoric Ceramic	Historic Ceramic	Glass	Shotgun Shell	Metal	Brick	Other	Count
N5 W85	-	-	-	-	-	-	-	0
N10 W5	-	-	1	-	-	1	-	2
N10 W15	-	-	1	-	-	-	-	1
N10 W25	-	-	1	-	-	-	-	1
N10 W45	-	-	5	-	-	-	-	5
N10 W70	-	-	4	-	-	-	-	4
N10 W90	-	-	-	-	-	-	-	0
N15 W0	-	-	2	-	-	-	-	2
N15 W10	-	-	3	-	-	-	-	3
N15 W20	-	-	1	-	-	1	-	2
N15 W30	-	-	1	-	7	1	1	10
N15 W50	-	2	74	-	1	1	-	78
N15 W75	-	-	5	-	-	-	-	5
N20 W5	-	-	2	-	1	-	-	3
N20 W15	1	-	-	-	-	-	-	1
N20 W25	-	-	1	-	-	-	-	1
N20 W35	-	-	3	-	-	-		3
N20 W55	-	6	60	-	-	2	1	69
N20 W80	-	-	1	-	-	-	-	1
N25 W0	-	-	-	-	1	-	-	1
N25 W10	-	-	-	-	-	-	-	0
N25 W20	-	-	2	-	-	-	-	2
N25 W30	(Bag missing)							2
N25 W40	-	-	-	-	-	-	-	0
N25 W60	1	-	6	-	-	-	-	7
N25 W85	-	2	-	-	-	-	-	2
Σ	3	10	181	0	12	6	2	216
* **TOTALS**	**3**	**96**	**813**	**3**	**26**	**24**	**34**	**1001**

* (Note: row and column totals will differ by two (2) due to missing bag from Site 4, N25 W30)

APPENDIX 2: Site 1 Test Unit Data

APPENDIX 2: SITE 1 TEST UNIT DATA

Site 1 (3CT267), Artifact Counts by Category and Level from 1 x 1 m Test Unit at N15 W29

	Artifact Categories							
Level	Prehistoric Ceramic	Historic Ceramic	Glass	Shotgun Shell	Metal	Brick	Other	Count
I, 0-10 cm	-	7	141	-	3	3	2	156
II, 10-20 cm	-	1	23	-	5	-	1	30
Σ	0	8	164	0	8	3	3	186

APPENDIX 3: Resume of Principal Investigator

Mitchell R. Childress
Garrow & Associates, Inc.

Education

1982 - B.A., Anthropology/Sociology, Rhodes College, Memphis, Tennessee (cum laude).
1983 - Graduate Studies, Anthropology, Washington State University, Pullman, Washington.
1989 - M.A., Anthropology, Memphis State University, Memphis, Tennessee.

Areas of Specialization

Ceramic and Lithic Analysis, Ethnoarchaeology, Prehistoric Archaeology of the Southeastern United States, Cultural Resource Management.

Professional Memberships and Offices

1987 - Present: Member of the Arkansas Archaeological Society.
1987 - 1989: Vice President, Bluff City Chapter of the Arkansas Archaeological Society.
1990 - Present: Associate, Current Anthropology
1987 - Present: Member of the Mid-South Association of Professional Anthropologists.
1987 - Present: Member of the Society for American Archaeology.
1987 - Present: Member of the Southeastern Archaeological Conference.
1987 - Present: Member of the Tennessee Anthropological Association.

Professional Experience

6/90 Currently employed by Garrow & Associates, Inc. serving as Branch Manager for the Memphis, Tennessee office and holding an Archaeologist II position. Project work has included serving as Principal Investigator or Field Director on archaeological survey and testing projects in the southeastern United States and within the island of Puerto Rico. Adjunct Faculty, Department of Anthropology, Memphis State University.

9/87-5/90 Employed by Memphis State University as Curator of Education for C.H. Nash Museum, Department of Anthropology. I also held an Adjunct Faculty Position in the Department and taught an introductory course in Archaeology.

6/87-9/87 Excavation at Late Mississippian site of Chucalissa (40SY1), Shelby County, Tennessee.

2/84-6/87 Employed as instructor of mathematics and science at Grace St. Luke's Episcopal School, 246 South Belvedere, Memphis, Tennessee.

6/86-9/86 Excavation at Late Mississippian site of Chucalissa (40SY1). Assisted in supervision of field school students enrolled in course administered through Memphis State University.

6/85-9/85 Excavation at Chucalissa (40SY1).

6/84-9/84 Excavation at Chucalissa (40SY1). Laboratory work at C.H. Nash Museum. Testing of suspected mound site near Reelfoot Lake, Obion County, Tennessee. Archaeological surface survey of areas in Tipton County, Tennessee.

2/84 Archaeological survey and limited testing of land for the proposed Bartlett Corporate Park, Shelby County, Tennessee. Work performed through Anthropological Research Center, Memphis State University.

10/83-12/83 Site survey work, testing and report writing concerning archaeological materials from Swan Bay (40HY66), Henry County, Tennessee.

1/83 Archaeological survey and testing, New Madrid, Missouri. United States Army Corps of Engineers, Memphis District.

1/82-3/82 Laboratory work at Memphis State University Anthropological Research Center. Involved in analysis of cultural materials collected during site survey work at Little Bear Creek Reservoir, Franklin County, Alabama.

10/81-12/81 Site survey work at Little Bear Creek Reservoir Management Project, Tennessee Valley Authority, Franklin County, Alabama.

6/80-9/80 Employed by Tennessee Department of Conservation, Division of Archaeology at Fort San Fernando Historic Research Project, Memphis.

Additional Experience and Volunteer Work

1981 Four week intensive survey of archaeology and geology of the four corners area, Southwestern United States (Rhodes College).

1981 Assisted in limited testing at the DeSoto Park Mound site in downtown Memphis.

1983 Survey of lithic procurement sites in eastern Oregon and Washington (Washington State University).

1984 Assisted in the excavation of an historic well at the Gerber Annex/Falls Building site (40SY480) in downtown Memphis.

1984 Assisted in excavations at the historic Magevney House site in downtown Memphis.

Manuscripts, Reports and Papers

1983a The Hatley Farmstead and Cabin: Ethnoarchaeology of a Non-Structure. Research project report on file, Department of Anthropology, Washington State University, Pullman, Washington.

1983b *Archaeological Investigations at the Swan Bay Site (40HY66), Henry County, Tennessee.* Anthropological Research Center, Department of Anthropology, Memphis State University. Submitted to the Tennessee Valley Authority, Norris, Tennessee. (Junior author, with Guy G. Weaver)

1984 *An Archaeological Reconnaissance for the Proposed Bartlett Corporate Park, Bartlett, Shelby County, Tennessee.* Anthropological Research Center, Department of Anthropology, Memphis State University. Submitted to the City of Bartlett. (Junior author, with Guy G. Weaver)

1988a Perspectives on Emerging Chiefdoms: A Comparative Analysis. Paper submitted to the Southern Anthropological Association Student Paper Competition, 23rd Meeting, Tampa, Florida. Honorable Mention. (Abstract contained in program)

1988b An Ethnoarchaeological Analysis of Choctaw Ball Racket Manufacture: Learning from the Ikbi. Manuscript on file, Department of Anthropology, Memphis State University.

1989a *Measurement and Analysis of Whole Vessels from the Chucalissa Site (40SY1).* Final Practicum Report submitted in partial fulfillment of M.A. requirements, on file, Department of Anthropology, Memphis State University.

1989b An Assemblage of Vessels from the Chucalissa Site, Shelby County, Tennessee. Paper presented at the 46th Annual Meeting of the Southeastern Archaeological Conference, Tampa, Florida.

1990a Flaked Rhyolite Tools from Reynolds County, Missouri. *Missouri Archaeological Society Quarterly* (in press).

1990b Mortuary Vessels and Comparative Ceramic Analysis: An Example from the Chucalissa Site. Manuscript on file, C.H. Nash Museum, Department of Anthropology, Memphis State University.

1990c Unit 4 Mound Excavations at the Chucalissa Site, 1960-1967. Paper presented at the 11th Annual Meeting of the Mid-South Archaeological Conference, Pinson, Tennessee. (Senior author, with Camille Wharey)

1990d *An Archaeological Survey of the Council Fire Development Tract, Hamilton County, Tennessee and Catoosa County, Georgia.* Report submitted to Leonard Kinsey and Associates, Ltd., Chattanooga, Tennessee. Garrow & Associates, Inc., Atlanta. (Senior author, with Patrick H. Garrow)

1990e *A Cultural Resource Reconnaissance Within the Proposed Flood Control Project Area on Río Grande de Manatí at Barceloneta, Puerto Rico.* Draft Report submitted to the U.S. Army Corps of Engineers, Jacksonville District, Jacksonville, Florida. Garrow & Associates, Inc., Atlanta.

1990f *A Cultural Resources Reconnaissance of the Proposed Río Antón Ruíz Flood Control Project at Punta Santiago, Humacao, Puerto Rico.* Draft Report submitted to the U.S. Army Corps of Engineers, Jacksonville District, Jacksonville, Florida. Garrow & Associates, Inc., Memphis, Tennessee. (Junior author, with C. Andrew Buchner)

1990g *A Cultural Resource Reconnaissance for the Proposed Gaines Ferry Substation and Transmission Line Corridor, Hall County, Georgia.* Report submitted to Oglethorpe Power Corporation, Tucker, Georgia. Garrow & Associates, Inc., Atlanta.

1990h *A Cultural Resources Reconnaissance and Literature and Records Search for the Proposed Pike County Landfill, Alabama.* Report submitted to Waste Away Group, Inc., Montgomery, Alabama. Garrow & Associates, Inc., Memphis, Tennessee. (Third author, with Stephen C. Cole and C. Andrew Buchner)

APPENDIX 4: Scope of Work

SCOPE OF WORK ADDENDUM

1. Surface collections have been conducted on all four sites. Artifacts require cleaning and analysis.

2. Site 1, see attached map, has been tested (1x1 m unit). Artifacts require cleaning and analysis.

3. Items 1 and 2 contain between 1,100 and 1,200 artifacts.

4. Contractor will fill out site forms and obtain state site numbers.

6. Previously collected surface (sites 1-4) and test unit (site 1) artifacts will be obtained from the Corps of Engineers.

DESCRIPTION/SPECIFICATIONS

A CULTURAL RESOURCES SITE LITERATURE SEARCH,
ARTIFACT CLEANING, ANALYSIS AND CURATION PREPARATION
AND REPORT WRITING WITHIN THE PROPOSED PERMIT AREA

1.1. General Scope of Services. The types of services to be performed by the Contractor include:

a. A Cultural Resources Background and Literature Searches, Artifact Cleaning, Analysis, and Curation Preparation and Report Writing Within the Proposed Permit Area.

b. Detailed analysis of data obtained from fieldwork and other sources for the purpose of determining site significance with respect to National Register of Historic Places or to supply data prerequisite to performance of other work tasks.

c. Compilation and synthesis of all necessary data for making determinations of cultural resources site eligibility for the National Register of Historic Places, including preparation of National Register nomination forms.

d. Written cultural resources assessments and evaluations for environmental impact statements, environmental assessments, and other project documents.

e. Preparation of technical reports containing results of work accomplished under this contract.

1.2. Legal Contexts. Tasks to be performed are in partial fulfillment of the Memphis District's obligations under the National Historic Preservation Act of 1966 (P.L. 89-665), as amended; the National Environment Policy Act of 1969 (P.L. 91-190); Executive Order 11593, "Protection and Enhancement of Cultural Environment; the Archaeological Resources Protection Act of 1979 (PL 96-95); and the Advisory Council on Historic Preservation, "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800).

1.3. Personnel Standards.

a. The Contractor shall utilize a systematic, interdisciplinary approach to conduct the study. Specialized knowledge and skills will be used during the course of the study to include expertise in archeology, prehistory, ethnology, history, architecture, geology and other disciplines as required to fulfill requirements of this Scope of Work. Techniques and methodologies used for the study shall be representative of the state of current professional knowledge and development.

b. The following minimal experiential and academic standards shall apply to personnel involved in investigations described in this Scope of Work:

(1) Archeological Project Directors or Principal Investigator(s) (PI). Individuals in charge of an archeological project or research investigation contract, in addition to meeting the appropriate standards for archeologists, must have a publication record that demonstrates extensive experience in

successful field project formulation, execution and technical monograph reporting. Unless otherwise directed by the Contracting Officer, it will be mandatory that at least one individual actively participating as Principal Investigator or Project Director under this contract, have demonstrated competence and ongoing interest in relevant research domains in the Southeast Missouri Region. Extensive prior research experience as Principal Investigator or Project Director in immediately adjacent areas will also satisfy this requirement. The requirement may also be satisfied by utilizing consulting Co-principal Investigators averaging no less than 25% of Principal Investigator paid hours for the duration of contract activities. Changes in any Project Director or Principal Investigator during a delivery order must be approved by the Contracting Officer. The Contracting Officer may require suitable professional references to obtain estimates regarding the adequacy of prior work.

(2) Archeologist. The minimum formal qualifications for individuals practicing archeology as a profession are a B.A. or B.S. degree from an accredited college or university, followed by a minimum of two years of successful graduate study or equivalent with concentration in anthropology and specialization in archeology and at least two summer field schools or their equivalent under the supervision of archeologists of recognized competence. A Master's thesis or its equivalent in research and publication is highly recommended, as is the M.A. degree.

(3) Architectural Historian. The minimum professional qualifications in architectural history are a graduate degree in architectural history, historic preservation, or closely related fields, with course work in American architectural history; or a bachelor's degree in architectural history, historic preservation, or closely related field plus one of the following:

(a) At least two years full-time experience in research, writing, or teaching in American history or restoration architecture with an academic institution, historical organization or agency, museum, or other professional institution; or

(b) Substantial contribution through research and publication to the body of scholarly knowledge in the field of American architectural history.

(4) Other Professional Personnel. All other personnel utilized for their special knowledge and expertise must have a B.A. or B.S. degree from an accredited college or university, followed by a minimum of two years of successful graduate study with concentration in appropriate study and a publication record demonstrating competing in the field of study.

(5) Other Supervisory Personnel. Persons in any supervisory position must hold a B.A., B.S. or M.A. degree with a concentration in the appropriate field of study and a minimum of 2 years of field and laboratory experience in tasks similar to those to be performed under this contract.

(6) Crew Members and Lab Workers. All crew members and lab workers must have prior experience compatible with the tasks to be performed under this contract.

c. All operations shall be conducted under the supervision of qualified professionals in the discipline appropriate to the data that is to be

discovered, described or analyzed. All contract related activities shall be performed consistent with the Secretary of Interior's Standards and Guidelines for Archeology and Historic Preservation, and the Society of Professional Archeology's Code of Ethics and Standards. Vitae of personnel involved in project activities may be required by the Contracting Officer at anytime during the period of service of this contract.

1.4. The Contractor shall designate in writing the name or names of the Principal Investigator(s). In the event of controversy or court challenge, the Principal Investigator shall be available to testify with respect to report findings. The additional services and expenses will be at Government expense, per paragraph 1.9 below.

1.5. The Contractor shall keep standard field records which may be reviewed by the Contracting Officer. These records shall include field notes, appropriate state site survey forms and any other cultural resource forms and/or records, field maps and photographs necessary to successfully implement requirements of the Scope of Work. The Contractor shall supply the original, or copies, of all records to the Corps at the Completion of the project.

1.6. To conduct field investigations, the Contractor will obtain all necessary permits, licenses; and approvals from all local, state and Federal authorities. Should it become necessary in the performance of the work and services of the Contractor to secure the right of ingress and egress to perform any of the work required herein on properties not owned or controlled by the Government, the Contractor shall secure the consent of the owner, his representative, agent, or leasee, prior to effecting entry and conduct the required work unless otherwise notified by Contracting Officer on such property.

1.7. Innovative approaches to data location, collection, description and analysis, consistent with other provisions of this contract and the cultural resources requirements of the Memphis District, are encouraged.

1.8. No mechanical power equipment other than that referenced in paragraph 3.7. shall be utilized in any cultural resource activity without specific written permission of the Contracting Officer.

1.9. The Contractor shall furnish expert personnel to attend conferences and furnish testimony in any judicial proceedings involving the archeological and historical study, evaluation, analysis and report. When required, arrangements for these services and payment therefor will be made by representatives of either the Corps of Engineers or the Department of Justice.

1.10. The Contractor, prior to the acceptance of final reports, shall not release any sketch, photographs, report or other material of any nature obtained or prepared under this contract without specific written approval of the Contracting Officer.

1.11. The extent and character of the work to be accomplished by the Contractor shall be subject to the general supervision, direction control and approval of the Contracting Officer. The Contracting Officer may have a representative of the Government present during any or all phases of Scope of Work requirements.

1.12. The Contractor shall obtain Corps of Engineers Safety Manual (EM 385-1-1) and comply with all appropriate provisions. Particular attention is directed to

safety requirements relating to the deep excavation of soils.

1.13. There will be two categories of meetings between Contractor and Contracting Officer: (1) scheduled formal meetings to review contract performance, and (2) informal, unscheduled meetings for clarification, assistance, coordination and discussion. The initial meeting may be held prior to the beginning of field work. Category (1) meetings will be scheduled by the Contracting Officer and will be held at the most convenient location, to be chosen by the Contracting Officer. This may sometimes be on the project site, but generally will be at the office of the Contracting Officer.

2. DEFINITIONS.

2.1. "Cultural Resources" are defined to include any building, site, district, structure, object, data, or other material relating to the history, architecture, archeology, or culture of an area.

2.2. "Background and Literature Search" is defined as a comprehensive examination of existing literature and records for the purpose of inferring the potential presence and character of cultural resources in the study area. The examination area may also serve as collateral information to field data in valuating the eligibility of cultural resources for inclusion in the National egister of Historic Places or in ameliorating losses of significant data in uch resources.

2.3. "Intensive Survey" is defined as a comprehensive, systematic and detailed on-the-ground survey of an area, of sufficient intensity to determine the umber, types, extent and distribution of cultural resources present and their elationship to project features.

2.4. "Mitigation" is defined as the amelioration of losses of significant rehistoric, historic, or achitectural resources which will be accomplished hrough preplanned actions to avoid, preserve, protect, or minimize adverse ffect upon such resources or to recover a representative sample of the data hey contain by implementaion of scien ific research and other professional echniques and procedures. Mitigation of losses of cultural resources includes, ut is not limiteed to, such measures as: (1) recovery and preservation of an dequate sample of archeological data to allow for analysis and published nterpretation of the cultural and environmental conditions prevailing at the imes(s) the area was utilized by man; (2) recording, through architectural uality photographs and/or measured drawings of buildings, structures, istricts, sites and objects and deposition of such documentation in the Library f Congress as a part of the National Architectural and Engineering Record; (3) elocation of buildings, structures and objects; (4) modification of plans or uthorized projects to provide for preservation of resources in place; (5) eduction or elimination of impacts by engineering solutions to avoid mechanical ffects of wave wash, scour, sedimentation and related processes and the effects f saturation.

2.5. "Reconnaissance" is defined as an on-the-ground examination of selected ortions of the study area, and related analysis adequate to assess the general ature of resources in the overall study area and the probable impact on esources of alternative plans under consideration. Normally reconnaissance ll involve the intensive examination of not more than 15 percent of the total

roposed impact area.

.6. "Significance" is attributable to those cultural resources of historical, rchitectural, or archeological value when such properties are included in or ave been determined by the Secretary of the Interior to be eligible for nclusion in the National Register of Historic Places after evaluation against he criteria contained in 36 CFR 63.

.7. "Testing" is defined as the systematic removal of the scientific, rehistoric, historic, and/or archeological data that provide an archeological r architectural property with its research or data value. Testing may include ontrolled surface survey, shovel testing, profiling, and limited subsurface est excavations of the properties to be affected for purposes of research lanning, the development of specific plans for research activities, excavation, reparation of notes and records, and other forms of physical removal of data nd the material analysis of such data and material, preparation of reports on uch data and material and dissemination of reports and other products of the esearch. Subsurface testing shall not proceed to the level of mitigation.

.8. "Analysis" is the systematic examination of material data, environmental ata, ethnographic data, written records, or other data which may be rerequisite to adequately evaluating those qualities which contribute to their ignificance.

. STUDY AREA

.1. Study Area

The project area is the proposed permit area and associated fill and/or orrow areas.

. GENERAL PERFORMANCE SPECIFICATIONS.

.1. Background and Literature Search.

a. This task shall include an examination of the historic and prehistoric nvironmental setting and cultural background of the study area and shall be of ufficient magnitude to achieve a detailed understanding of the overall cultural nd environmental context of the study area.

b. Information and data for the literature search shall be obtained, as ppropriate, from the following sources: (1) Scholarly reports - books, ournals, theses, dissertations and unpublished papers; (2) Official Records - ederal, state, county and local levels, property deeds, public works and other egulatory department records and maps; (3) Libraries and Museums - both egional and local libraries, historical societies, universities, and museums; 4) Other repositories - such as private collections, papers, photographs, etc.; 5) Archeological site files at local universities, the State Historic reservation Office, the office of the State Archeologist; (6) Consultation with ualified professionals familiar with the cultural resources in the area, as ell as consultation with protessionals in associated areas such as history, edimentology, geomorphology, agronomy, and ethnology.

c. The Contractor shall include as an appendix to the draft and final eports, written evidence of all consultation and any subsequent response(s), ncluding the dates of such consultation and communications.

d. The background and literature search shall be performed in such a anner as to facilitate the construction of predictive statements (to be ncluded in the study report) concerning the probable quantity, character, and istribution of cultural resources within the project area. In addition, nformation obtained in the background and literature search should be of such cope and detail as to serve as an adequate data base for subsequent cultural esources work undertaken for the purpose of discerning the character and ignificance of specific cultural resources or for the constuction of research esigns undertaken in conjunction with future area cultural resources tasks.

.3. Laboratory Processing, Analysis and Preservation.

All cultural materials recovered will be cleaned and stored in eterioration resistant containers suitable for long term curation. All rtifacts shall be prepared for curation in accordance with the criteria of the tate in which they are found. Diagnostic artifacts will be lableled and atalogued individually. A diagnostic artifact is defined herein as any object nich contributes individually to the needs of analysis required by this Scope f Work or the research design. All other artifacts recovered must minimally e placed in labeled, deterioration resistant containers, and the items atalogued. The Contractor shall describe and analyze all cultural materials ecovered in accordance with current professional standards. Artifactual and on-artifactual analysis shall be of an adequate level and nature to fulfill the equirements of this Scope of Work. All recovered cultural items shall be atalogued in a manner consistent with state requirements. The Contractor shall onsult with appropriate state officials as soon as possible following the onclusion of field work in order to obtain information (ex.: accession numbers) erequisite to such cataloging procedures.

GENERAL REPORT REQUIREMENTS.

1. The primary purpose of the cultural resources report is to serve as a anning tool which aids the Government in meeting its obligations to preserve id protect our cultural heritage. The report will be in the form of a mprehensive, scholarly document that not only fulfills mandated legal quirements but also serves as a scientific reference for future cultural sources studies. As such, the report's content must be not only descriptive t also analytic in nature.

2. Upon completion of all field investigation and research, the Contractor all prepare a report detailing the work accomplished, the results, and commendations for the project area. Copies of the draft and final reports of vestigation shall be submitted in a form suitable for publication and be epared in a format reflecting contemporary organizational and illustrative andards for current professional archeological journals. The final report all be typed on standard size 8½" x 11" bond paper with pages numbered and th page margins one inch at top, bottom and sides. Photographs, plans, maps, awings and text shall be clean and clear.

3. The report shall include, when appropriate, the following items:

a. Title Page. The title page should provide the following information; the type of task undertaken, the study areas and cultural resources which were assessed; the location (county and state), the date of the report; the contract number; the name of the author(s) and/or the Principal Investigator; and the agency for which the report is being prepared. If a report has been authored by someone other than the Principal Investigator, the Principal Investigator must at least prepare a forward describing the overall research context of the report, the significance of the work, and any other related background circumstances relating to the manner in which the work was undertaken.

b. Abstract. An abstract suitable for publication in an abstract journal shall be prepared and shall consist of a brief, quotable summary useful for informing the technically-oriented professional public of what the author considers to be the contributions of the investigation of knowledge.

c. Table of Contents.

d. Introduction. This section shall include the purpose of the report, a description of the proposed project, a map of the general area, a project map, and the dates during which the investigations were conducted. The introduction shall also contain the name of the institution where recovered materials and documents will be curated.

e. Environmental Context. This section shall contain, but not be limited to, a discussion of probable past floral, faunal, and climatic characteristics of the project area. Since data in this section may be used in the evaluation of cultural resources significance, it is imperative that the quantity and quality of environmental data be sufficient to allow subsequent detailed analysis of the relationship between past cultural activities and environmental variables.

f. Previous Research. This section shall describe previous research which may be useful in deriving or interpreting relevant background data, problem domains, or research questions and in providing a context in which to examine the probability of occurrence and significance of cultural resources in the study area.

g. Literature Search and Personal Interviews. This section shall discuss the results of the literature search, including specific data sources, and personal interviews which were conducted during the course of investigations.

h. Research Design. Where possible, the research design should contain a discussion of potentially relevant research domains and questions. Field and analytical methods and other data should be explicitly related to research questions.

i. Fieldwork Methods and Collected Data. This section should contain a description of field methods and their rationale as well as, a description of data collected. All cultural items collected must be listed with their respective proveniences either in the main body of the report or as an appendix. Where appropriate, field methods should be explicitly related to the research design.

j. Analytical Methods and Results. This section shall contain an

xplicit discussion of analytical methods and results, and shall demonstrate how ield data, environmental data, previous research data, the literature search nd personal intervies have been utilized. Specific research domains and uestions as well as methodological strategies employed should be included where ossible.

k. Recommendations.

(1) When appropriate and when sufficient information is available, this ection should contain assessments of the eligibility of specific cultural roperties in the study area for inclusion in the National Register of Historic laces. Where insufficient data are present for such evaluation, the Contractor hall list activities necessary to obtain such data.

(2) Significance should be discussed explicitly in terms of previous egional and local research and relevant problem domains. Statements concerning ignificance shall contain a detailed, well-reasoned argument for the property's esearch potential in contributing to the understanding of cultural patterns, rocesses or activities important to the history or prehistory of the locality, egion or nation, or other criteria of significance. Conclusions concerning nsignificance likewise, shall be fully documented and contain detailed and ell-reasoned arguments as to why the property fails to display adequate esearch potential or other characteristics adequate to meet National Register riteria of significance. For example, conclusions concerning significance or nsignificance relating solely to the lack of contextual integrity due to plow isturbance or the lack of subsurface deposits will be considered inadequate. here appropriate, due consideration should be given to the data potential of uch variables as site functional characteristics, horizontal intersite or ntrasite spatial patterning of data and the importance of the site as a epresentative systemic element in the patterning of human behavior. All report onclusions and recommendations shall be logically and explicitly derived from ata discussed in the report.

(3) The significance or insignificance of cultural resources can be etermined adequately only within the context of the most recent available local id regional data base. Consequently, the evaluation of specific individual ultural loci examined during the course of contract activities shall relate hese resources not only to previously known cultural data but also to a nthesized interrelated corpus of data including those data generated in the esent study.

l. References (American Antiquity Style).

m. Appendices (Maps, Correspondence, etc.). A copy of this Scope of Work all be included as an appendix to the final report of investigations.

4. All of the above items may not be appropriate to all delivery order tasks. ther, the above items do not necessarily have to be in discrete sections so ng as they are readily discernable to the reader.

5. In order to prevent potential damage to cultural resources, no information all appear in the body of the report which would reveal precise resource cation. All maps which include or imply precise site locations shall be cluded in reports as a readily removable appendix (e.g.: envelope).

. No logo or other such organizational designation shall appear in any part the report (including tables or figures) other than the title page.

. Unless specifically otherwise authorized by the Contracting Officer, all orts shall utilize permanent site numbers assigned by the state in which the dy occurs.

. All appropriate information (including typologies and other classificatory ts) not generated in these contract activities shall be suitably referenced.

. Reports shall contain site specific maps when appropriate. Site maps ll indicate site datum(s), location of data collection units (including vel cuts, subsurface test units and surface collection units), site ndaries in relation to proposed project activities, site grid systems (where ropriate), and such other items as the Contractor may deem appropriate to the poses of this contract.

0. Information shall be presented in textual, tabular, and graphic forms, chever are most appropriate, effective and advantageous to communicate essary information. All tables, figures and maps appearing in the report ll be of publishable quality. Itemized listings of all recovered artifacts their smallest available proveniences must appear in either the body of the ort or as a report appendix.

1. Any abbreviated phrases used in the text shall be spelled out when the ase first occurs in the text. For example use "State Historic Preservation icer (SHPO)" in the initial reference and thereafter "SHPO" may be used.

2. The first time the common name of a biological species is used it should followed by the scientific name.

3. In addition to street addresses or property names, sites shall be located the Universal Transverse Mercator (UTM) grid.

4. Generally, all measurements should be metric.

5. As appropriate, diagnostic and/or unique artifacts, cultural resources or r contexts shall be shown by drawings or photography. Black and white ographs are preferred except when color changes are important for rstanding the data being presented. No instant type photographs may be l.

. Negatives of all black and white photographs and/or color slides of all es included in the final report shall be submitted to the Contracting cer. Copies of all negatives shall be curated with other documentation.

SUBMITTALS.

Unless otherwise stipulated in the delivery order, the Contractor shall ir 2 copies of the draft report, one unbound original and 20 final report es with professional quality binding. In the event more than one series of ew comments is determined necessary by the Contracting Officer, additional r copies may be required.

At any time during the period of service of this contract, upon the ten request of the Contracting Officer, the Contractor shall submit, within alendar days, any portion or all field records described in paragraph 1.5. out additional cost to the Government.

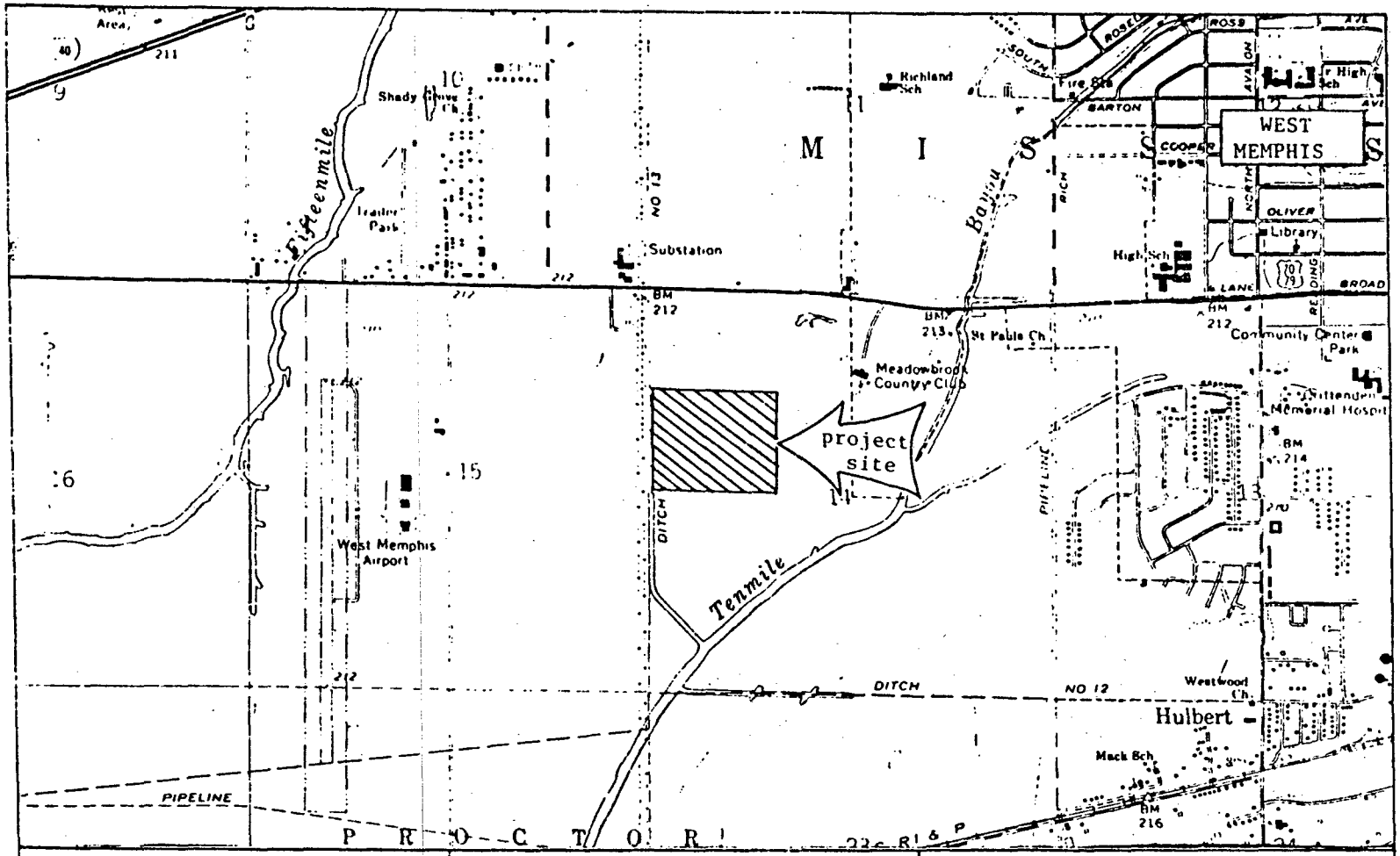
Documentation. The Contractor shall submit detailed monthly progress rts to the Contracting Officer by the 7th day of every month for the tion of the contract. These reports will contain an accurate account of all d work, laboratory procedures and results in sufficient detail to allow toring of project progress.

Additional submittals may be required.

The Contractor shall make any required corrections to reports after review he Contracting Officer. The Contracting Officer may defer Government review ents pending receipts of review comments from the State Historic ervation Officer or reviewing agencies. More than one series of draft rt corrections may be required. In the event that the government review od (40 days) is exceeded and upon request of the Contractor, the contract od will be extended automatically on a calendar day for day basis. Such nsion shall be granted at no additional cost to the Government.

Schedule.

The work must be received by the required date shown on the purchase .

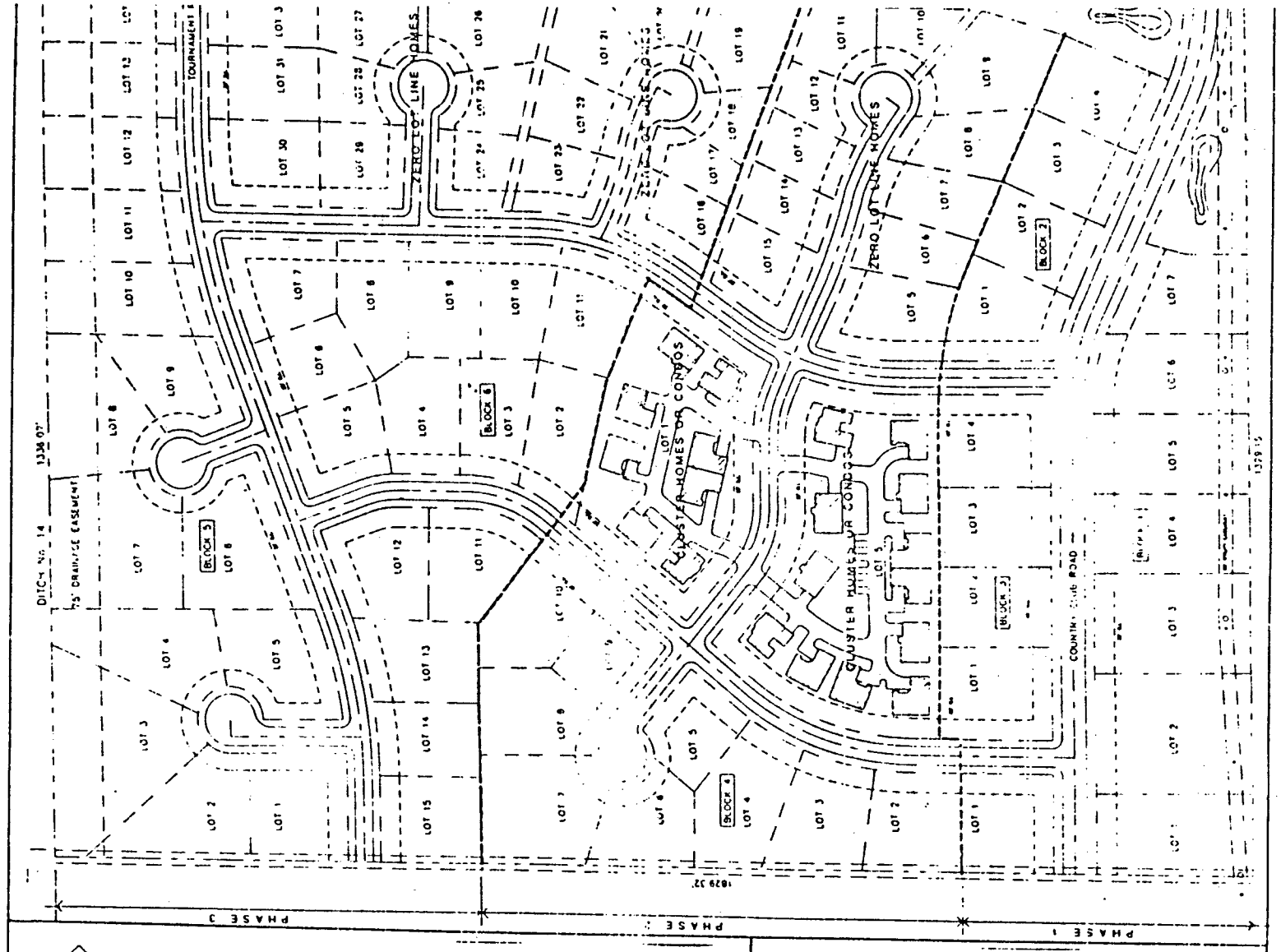


WEST MEMPHIS QUADRANGLE
ARKANSAS–TENNESSEE
7.5 MINUTE SERIES (TOPOGRAPHIC)
NW/4 MEMPHIS 15' QUADRANGLE

SCALE
0 1/2 1 MILE
1000 0 1000 2000 3000 FEET

TENMILE BAYOU-6
Country Club Gardens-First Addition

Sheet 1 of 2 Location Map

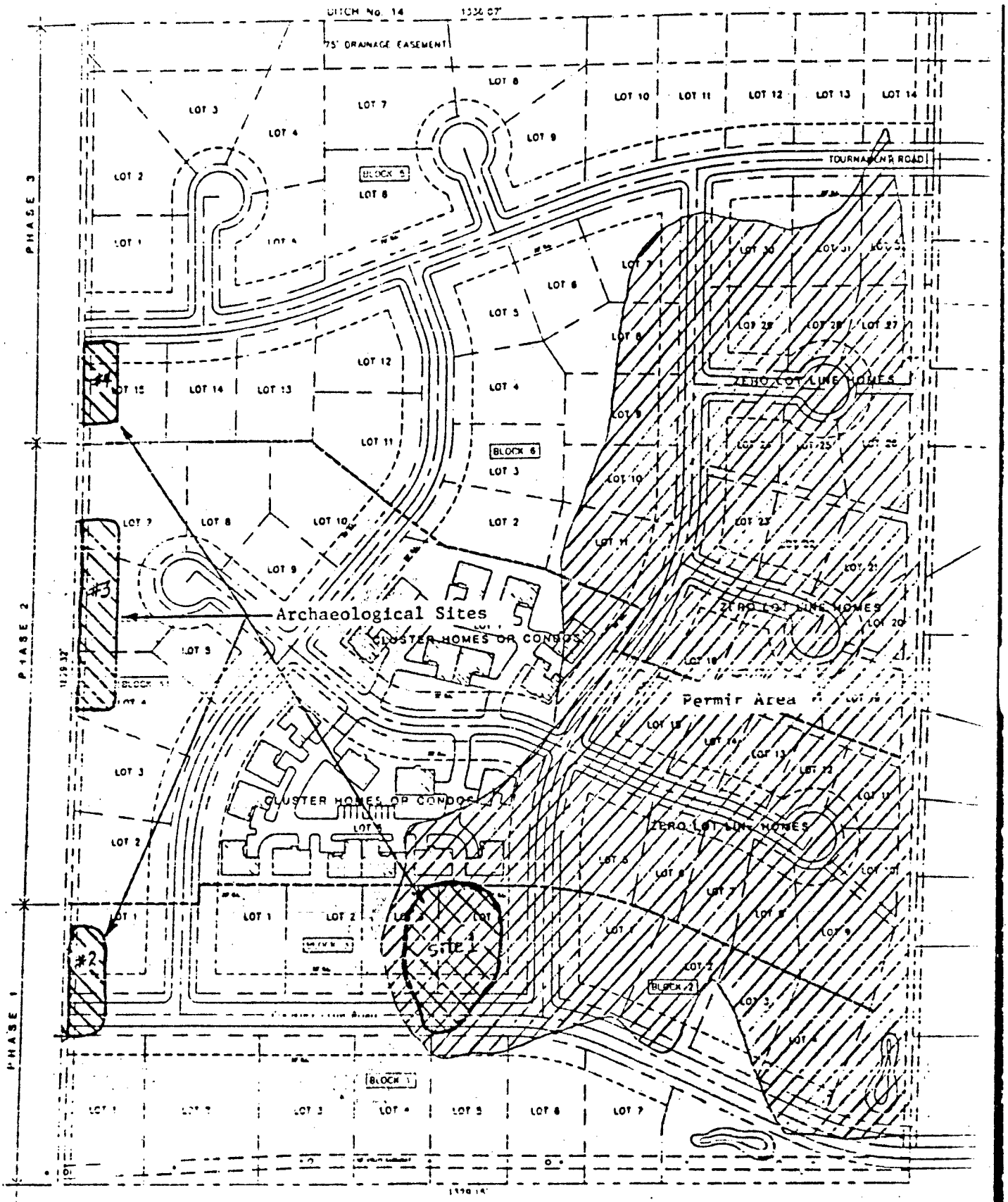


COUNTRY CLUB GARDENS
FIRST ADDITION

SITE PLAN

TENMILE BAYOU-6
Country Club Gardens- First Addition

Sheet 2 of 2 Site Plan



SITE PLAN

Applicant: Guaranty Loan & Real Estate
Application No.: Ten Mile Bayou-6